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TO CONTROL CANCER

IS CANCER a public health problem? Has the public health nurse a responsibility in its control? Our answer is, "Yes."

True, cancer does not endanger an entire community as does a case of typhoid fever. It does not even threaten the life and health of the family—directly. And we do not know enough about the cause to prevent its occurrence with certainty.

It does, however, claim the lives of more people in the United States than any cause except heart disease. It takes its toll at a period in life when the individual's experience should make him most valuable to society. It causes an untold amount of suffering. It frequently threatens the economic and emotional security of families. And by its drain on the family's energies and financial resources it indirectly affects the physical and mental health of the members. While its occurrence cannot always be prevented, it can frequently be forestalled and can be cured if given proper treatment in time.

Probably no other person is in a better position to bring about the treatment of cancer in the curable stage than the public health nurse. It is to her that the industrial worker confides the secret worries and the little symptoms that do not disappear—if the nurse has a listening ear. It is the nurse who asks Aunt Susie how she is feeling today—asks as if she wanted a more specific reply than a "Fine, thank you." It is the nurse who bathes Mrs. Smith who is ill and observes the small lump on the breast, the irritated dark mole, or other symptoms that call for medical attention.

Having observed the symptoms that may be danger signals, the nurse faces the real test of her skill. How shall she warn the patient without frightening him? How treat the matter casually enough to prevent alarm, and yet give it importance enough to insure prompt action? Here indeed is a crucial test of our ability to motivate conduct; to replace the taboos and fears of the past with the well founded hope of cure if treated in time.

New impetus has recently been given to the nationwide educational campaign carried on for many years by the American Society for the Control of Cancer, through the organization in 45 states of its Women's Field Army with the slogan: Early cancer is curable—Fight it with knowledge. Grace Ross, president of the National Organization for Public Health Nursing, is a member of the group's National Advisory Board.

Knowledge in this field is changing and the nurse can make an effective contribution only if she is well informed. A series of three articles on "The Nurse's Part in the Control of Cancer," by Dr. Louis C. Kress, is being published beginning in this issue (page 85), in order to bring the latest and most authoritative information on the subject to our readers. We hope that every nurse will feel an increased responsibility to do her part in the eradication of this disease which so vitally affects family health and happiness.

Play Is the Thing

By KATHERINE BROWNELL OETTINGER

The nurse interprets the philosophy of play to the family and demonstrates the construction of inexpensive play materials through the use of illustrations and displays

HOW CAN the public health nurse ignore the play life of the child? Deeply concerned with his habits of eating and sleeping, she realizes that play is intermingled with every other element in his growth. What does overstimulating play or the absence of proper play opportunities do to healthy nutrition and rest? Temper tantrums which disturb the whole tenor of family life can often be directly traced to frustrations in trying to live up to older brother's toys. Such an effort, demanding as it does an unattained development, can only create a constant sense of failure and lack of interest.

How easy it is for the nurse with some knowledge of play needs to solve the problem of whining two-year-old Nancy, who hangs on to her mother's skirts, making an antepartum visit impossible. The nurse not only redirects the interest of the troublesome little intruder, but she lays the foundation for the mother's understanding of how to help Nancy adjust to the arrival of the new baby. Through enthusiasm for properly selected toys, Nancy can be helped to meet later deprivations due to her mother's divided attention.

What of the harassed mother who cannot prepare the baby's formula because of the time required to keep Jimmy out of destructive mischief? Simple substitutions often create miracles. It is quite as satisfying to Jimmy to pound nails in an especially provided board as to use the coveted hammer in denting his mother's furniture.

The personality problems of the shy child, the timid or fearful child, the slow child, or the too aggressive child can be helped most directly by a common-sense play program. Proper toys are a palliative that help to take the edge off the pain of the sensitive child who is driven by feelings of inferiority. Even when facilities for a complete study of all interrelated factors underlying the problems of children are not available, the nurse can be assured that a sound plan for play materials is a step in the right direction. To help children build their play experiences so that they can become "constructive, persistent, and socially sound young persons"[1] is the focus of interest of the child psychologist. How better can the nurse aid in attainment of this goal than by making workable a few fundamental, practical principles of children's play? Simple suggestions applied with imagination to the actual situation may stimulate the family to a useful change in the children's play activities.

BEST PLAYTHINGS ARE NOT COSTLY

At this point both the nurse and the family alike may be heard crying: "But what of the cost?" The best playthings do not require money. Understanding and ingenuity are more important than income. What one dollar accomplished for a back-yard playground is recorded by a family, in *Parents' Magazine*.[2] Half of that amount was dedicated to the aesthetic value gained through the use of paint. Fruit boxes and crates inspired

the children to construct forts, houses, bridges, trains, and tables. Three old-fashioned cellar doors provided a slide, as well as a runway for balls and automobiles. A tall ladder made a fine trapeze. A swing made with a piece of rope and a small board was a popular part of the equipment.[3]

Any father who is handy with a saw can make a perfect set of blocks. The children will enjoy doing the light sandpapering that is desirable to remove any roughness. Lumber scraps are easily available. They can be made into brick-shaped blocks 2 by 4 by 10 inches in size; and 2 by 4 inch planks may be made into large blocks. No child can have too many large, hollow building blocks and boards. Out of these, which may be made 12 by 12 by 14 inches in size, they produce houses, airplanes, stores, or boats. The father who constructs this material has given his preschool child the bone and sinew of early mental and muscular development.

Hardware stores will donate nail kegs. Sandpapered and painted they are unexcelled for rolling, for sitting on, and for use in outdoor games. An especially appealing toy for a two-year-old may be made by knocking out the bottom of an ordinary barrel, removing the hazards of rough edges, and stabilizing the staves at the ends. Placed in a horizontal position, this toy gives the child an opportunity for straddling, for crawling through the tunnel, and for creating many games of the peek-a-boo variety. Big brother may use it for a garage.

Amazing activity can surround a smooth walking-board made anywhere from 6 to 12 feet in length, about 12 inches in width, and thick enough to withstand use for walking on an inclined plane, for bridging the distance between two packing boxes, or for seesawing on wooden construction horses. Nature urges the little child to the use of large muscles during his early years. Father promotes skilled coördination by collecting this variety of inexpensive apparatus.

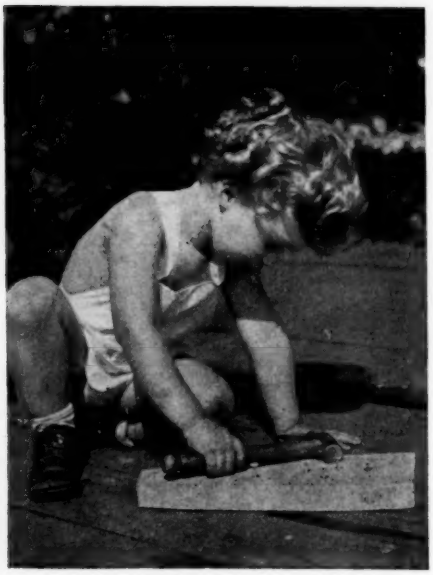
No child need be without a wagon so long as the father can put casters on the four corners of a grocery box, which is then pulled by a long, stout rope. The revolving motion of the casters on this wagon allows for many more tricks than its commercial model. Baby brother can ride in this vehicle; construction blocks can be transported; dirt or autumn leaves can be collected. As with so many toys, the use will develop with the interest and skill of the child. The child's manner of play measures his development. However, play behavior is always a continuous process, so that each stage merges gradually into the rest. Hence a good toy is not limited to any one period of maturity. The popular ball illustrates this truth. It is still the most common and effective toy for all ages.

RURAL PLAY OPPORTUNITIES

How many rural districts offer endless play opportunities which are never utilized! With resources within such close reach, the country dweller is apt to undervalue the gratification given by play with the earth and things earthy. The nurse may stimulate a new awareness of the challenge which the simple things in nature offer in play material. What child does not love to collect flowers, leaves, stones, or horse-chestnuts? Nature study makes a child more friendly and at home in his environment, while opening the door for limitless hobbies.[4] Hoes, shovels, sticks, stones, berries, and leaves may be used to answer the need for creating designs and patterns better than the peg and boards or beads and paper of the city child. With gardens everywhere the country child is least likely to have a garden of his own. The nurse can awaken the parent to realize that the barn, the trees, or the grape-arbor with a slight rearrangement can often outdo the city playground.

Even a discarded automobile tire attached to the end of a long rope hung with regard to the height of the young gymnast gives opportunity for a swing and a trapeze, and for clever variations of climbing. Imaginative utilization of the material of physical and mental adventure all about the child will erase any desire for a factory product. Wherever there is outdoor space a shack can be constructed with the father's help—offering a chance for parent and child to play together. Old boards can be used and covered with shingle scraps; orange crates and boxes make fascinating furniture. It is a project that the whole family can enjoy. Once completed, it gives that opportunity for privacy which is indispensable to the satisfying existence of all children. This is their own playhouse. Lacking this more complete structure, the young child may be satisfied with a pup-tent erected out of old sheets or bags. Here, games with Indian or cowboy costumes bring forth dramatic play. It is easier to limit the range of the war-whoops if a special place has been provided.

This embryo carpenter likes sturdy tools



Both city and country mothers who are disturbed by this phase of the child's development may find comfort in the nurse's assurance that it offers a unique outlet for the child's thwarted wishes and ambitions. In his imagination he may safely find himself victorious when his own real or imagined inadequacies begin to press too hard. He need not depend upon success for satisfaction in these games, nor in other dress-up dramatics of his own making. It is hard to measure the joy of an old-junk box filled with odds and ends: worthless old dresses,

An easel is a joy to the young artist

hats, curtains, beads, buttons, ribbons, and parts of clocks; or disused household things. Increasingly child guidance leaders are recognizing that the child expresses himself and finds solutions to his problems in play. Emotional balance can often be successfully preserved without a conscious effort on the part of the child or family, if only the proper kind and variety of play are offered.

Play with water holds allurement from preschool years on. As a therapeutic measure for the child with enuresis this type of play has received special attention from the psychoanalytical field.* While the child-analyst points out that therapeutic results from play situations may be fostered only by especially prepared therapists, nevertheless, the nurse may borrow this principle in substituting outlets for undesirable tendencies.**

Soap bubbles satisfy this need for playing with water. Two pipes available for five cents apiece make it possible for two children to play together. Other mediums of expression suggested for children who have not gained mastery in their excretory functions are the use of finger paints and clay, and gardening. The child may recognize this material as some kind of modified and acceptable fecal matter providing a desirable sublimation. Old-fashioned mud pies are not without their use. Dough may be manipulated while mother bakes. Thus an unconscious satisfaction is coupled with the need for adult imitation, which is found expressed in much child play. At Bellevue Hospital, Dr. Lauretta Bender found that children in the psychiatric department, laboring under many kinds of emotional problems, seemed to work out conflicts in the manipulation of plasticine.***

He loves to collect leaves and flowers

Digging in the sand box is irresistible

The sand box ranks high in satisfying the universal appeal of working with sand and gravel. Moreover, the backyard with a sand box will become a neighborhood gathering place. The se-

*Liss, Edward. "Play Techniques in Child Analysis." *The American Journal of Orthopsychiatry,* January 1936.

**Rank, Beata T. "The Therapeutic Value of Play." *Understanding the Child,* June 1938.

***Bender, Lauretta, M.D., and Wottmann, Adolf G. "The Use of Plastic Material as a Psychiatric Approach to Emotional Problems in Children." *The American Journal of Orthopsychiatry,* July 1937.

lection of equipment which stimulates play with others should always be a primary objective in planning play materials. A natural social group assembles without artificial aid around a sand box since its charm extends from two to ten years. The little child finds just digging, filling, or moulding irresistible. Household cups, spoons, or a colander add to the chance for dramatic play in re-enacting familiar scenes. The older child may go further afield in his imaginative interpretation and building. The sand box may be built five or six feet square with a board cut or molding board around the edge. Once more the cost can range from nothing up, according to the ability of the father to use discarded boxes and boards.

MATERIALS FOR INDOOR PLAY

Nor can we overlook the endless hours when provision must be made for quiet indoor play. Shelves built out of packing boxes not only make it possible to collect all the material in one place but give the child a freedom of choice in selecting the article most appealing to him at a given time. Without supervision, he soon learns to make personal selections. He also learns to replace the toy as his interest lags.

The shelves should be filled with proper materials and the child should then be left alone to work out his own play activities. This is an important credo for the nurse to leave with the family, whose members are too often convinced that they must play with the child, teach him, help him, and show him. Such assistance results only in overstimulation and in disinterest on the part of the child, who feels frustrated in not being able to live up to adult standards. What can blot out the joy of achievement in a tower of three blocks more quickly than daddy showing his perfect eight-block tower? Clay is satisfying fun just to make into strings of grass or worms, until mother spoils the day by modeling flowers or animals. Fair play demands that the child be accepted at his own two-, three-, or four-year-old pace. Only as he has the security of others' acceptance of his tempo can he accept himself, fulfilling his deep-seated need for feelings of safety in his unfolding world. Perfection in handling materials will come later. Let the habit of success dominate play, so that self-confidence will be the keynote of the child's emotional experience with play.

What shall these shelves contain? There is an abundance of inexpensive materials available for the child before he is five years old. It is important that he should have something he can do himself, rather than being a passive onlooker. In a careful study of the actual play behavior of nursery-school children, Dorothy Van Alstyne[5] found that attention was held for the longest periods with clay, painting materials, doll-corner equipment, blocks, beads, blunt scissors, puzzles, and crayons. There is not one of these which cannot be found in the five-and-ten-cent store. Doll beds can be made out of cigar boxes, or cradles from empty oatmeal boxes. Small packing boxes or the ever valuable orange crates make bureaus, beds, stoves, and cupboards for the little pretending mother. Spools, little boxes, milk-bottle tops, and the much used clothes pin—all collected in a special treasure box—stimulate imaginative play. Empty food boxes make satisfactory nested blocks. A series of cheese boxes attached to each other with large, strong hooks makes excellent trains, boats, or trucks. It is better to avoid confusing the younger child with wheels; he will enjoy pulling or pushing flat toys.

Puzzles delight all ages. It is the nurse's job to guide mothers in recognizing that puzzles of a few pieces are a big job for three-year-olds. It is important not to make the parts so intricate that they cannot be assembled by the child with a genuine feeling of success.

Calendar pictures, magazine pictures, or postcards mounted on cardboard to make a puzzle give variety and permanency. Incidentally, the care required to avoid losing any of the parts provides excellent indirect learning for the child.

Painting activities vary widely with the age of the child, but at no point need these entail expense. Powder paints can be obtained in vegetable dyes and mixed with water as the colors are needed. Carefully saved wrapping paper gives a large surface for the young artist to work unhampered with easy, swinging movements. An easel which further makes possible this sweeping motion can be made from a discarded wallpaper display stand. The paper supply may be attached with thumb tacks onto a staunch piece of beaverboard at least two feet square. A rubber apron should protect the child's clothing. This means of reducing extra housework inspires more mothers to support painting, clay-modeling, and the other desirable but messy activities.

Games which are homemade hold special interest for the maker. A standard with number-marked holes built by sawing up an old board makes an entertaining game of rolling marbles through the slots for score. Played alone or with friends this may sustain interest to the point where it is a real aid in learning arithmetic. The ancient game of ring-tossing can be played with a board to which is attached a perpendicular pole for catching discarded canning rubbers. A fishing game costs only two cents for a small magnet; the rest is fun to make from cardboard fish, pins hooked in the fishes' mouths, a stick with a string attached for the pole, and the magnet tied onto the string for bait. Older children find it more sport to number the fish and thus select which pinned mouth the magnet is to attract.

Games that the whole family play together will long be remembered by the children. Porter Lee's[6] investigation of what makes a successful family hinged upon recollections of family occurrences that had a "value-sense" to the members of the family involved. Years afterward they remembered the common pleasure in games played together, in the care and love of pets, in family festivals and picnics, and in excursions. Mr. Lee thinks that persistent education in the necessity for this type of constructive home experience is as necessary as education in the value of vitamins and vaccines.

In a visit to a depression-ridden family, the nurse may decide that her greatest contribution will come from an attempt to enrich family life by vivifying practical activities which the members can enjoy together.[7] Fear so besets many families that they are blind to possibilities within their own reach. It is the nurse who must have vision to combat the evil effects of present-day insecurity with substantial suggestions for participation of child and parents in play life together.

The necessity for this spark of leadership is illustrated by an experience with a mothers' club group, in which most of the members' husbands were unemployed. Not one of these parents had taken the children to see an extraordinary garden exhibit, a free showing of the manufacturing of a car on a miniature scale, the preview of a new streamlined train, or to the ever-available free tour of the local mines or museum. When the parents are once encouraged to undertake such an excursion, the very enthusiasm of the children may add a constructive force, so that other opportunities are grasped. Keeping alive a child's normal enjoyment in simple things may be the good that the ill wind of "recession" blows.

The nurse may find it difficult to explain to families exactly how play materials may be constructed, if she limits herself to words. It is important that she collect as much material for graphic presentation as possible. Mimeographed

pictures of some of the more important equipment, together with a summary of desirable materials for each age-level may be carried in the nurse's bag. She may collect from many magazines—which are increasingly concerning themselves with children's play—attractive photographs of children using the kind of material she is describing. Invaluable minutes spent in demonstration will convince the family of the reward of even such a simple enterprise as the pinwheel. And they will begin to understand play's meaning.

A visit to the local nursery school or play center may inspire a father to transform his home with similar homemade equipment. In an effort to make the theory of play realistic to the family, a toy lending library, similar to the loan closets of visiting nurse associations, is an excellent project for a junior volunteer group. Milwaukee maintains this project in connection with its juvenile court, and it creates responsibility and respect among the children for the property of others.

DISPLAY AT BABY CONFERENCE

A baby welfare station makes an excellent display center for mothers interested in toys for the very young baby. Here is a chance to make clear that learning through play begins in infancy. A demonstration play-yard may contain beads made out of empty spools of thread strung on tape, an unbreakable cup and a set of measuring spoons, clothespins surrounding the top of a coffee can, and rattles made from safe cookie tins papered or painted in attractive colors and filled with rice, beans, or pebbles. Homemade oilcloth dolls and soft stuffed animals hold much more charm when made by mother than when purchased at the store. Moreover, they are by far the safest toys for the baby who lies in his crib, for he may inadvertently drop his toys on his face as he examines them above his head. The mother can be taught not only to make them light in weight, but also to make them large enough so that the baby is not faced with the problem of finding the lost article before his mental development permits prolonged search. A mother may be asked to bring homemade toys to the baby conference to show other mothers; such a project will add greatly to the interest of the conference.

PLAY ESSENTIAL TO DEVELOPMENT

Even after the nurse has hurdled the obstacle of expense, she has not reached her objective. She must overcome the philosophy of an older generation in relation to play which has been handed down. Play is considered wasteful. Such maxims as "Those who play when young, will play when they are old" still represents a common attitude. The recent ideas of educators regarding the prime importance of play life has not filtered through to the average family. The nurse must be the messenger who persuades families to give play intelligent consideration. Mothers often think that since children play anyway it is unnecessary to bother about special provision for play. These mothers must come to the realization that good or bad habits of play depend upon the opportunities they provide for wholesome growth. Play is not just amusement; it is the most serious business of the child's life. The child learns through play. He develops habits of feeling and thought that help to mold his personality. He learns to live with other people. He develops coördination and skills, and exercises his larger and smaller muscles. Since toys are the tools of education and of satisfying personality growth, what needs shall they fill?

1. Toys should be sturdy and well built. A hammer, a pair of scissors, or a saw, if they are to be useful, must be real tools. Workmanship can easily be discouraged if the head of a hammer flies off, a pair of scissors tears, or a saw snags. Carpenter or sewing sets

too often are filled with gaudy, impractical tools. Flimsy toy carts or automobiles, or breakable housekeeping toys encourage destructiveness. If the mother buys toys with the idea that they are going to be discarded in a week, it is little wonder that she has "destructive" children. The substantial toy may cost more and have less glitter than the mechanical wonder that is fashioned to dazzle the superficial shopper; but the purchase of durability is a well advised saving. These toys also serve succeeding children in the family.

2. Toys should be judged by the amount of activity they offer the child. A toy, fitted to the child's age level, should offer him something to do. Since raw materials do not hold so great an appeal to adults, it is the nurse's job to see that the largest part of the toy budget is concentrated on these essentials. Present-day play equipment is a workshop, stripped for action.

3. Toys should be suited to the child's ability of the moment. Mental and physical development can be fairly accurately determined by the child's age-level. Scales of development show the progressive needs of growth. All general scales allow for adaptation based on a study of individual emotional or personality needs.

4. Toys should offer variety. A large number of toys is overwhelming. But every toy scheme should provide both indoor and outdoor toys. They may[8] be classified functionally as follows: Toys for the development of strength and skill; for constructive and creative play; for dramatic and imitative play; for social development; for artistic development; for hobbies and special interests.

Fortunate are the children of a period characterized by the belief that play is a medium of growth—not an age-old, profitless time-killer. The belief is spreading that play life educates the child to develop his potentialities physically, intellectually, emotionally, and socially; that it helps to make satisfying life adjustments and creates an integration of personality essential to wholesome living. It is also possible these children will be able to have additional happiness from the priceless gift of leisure that seems to be an increasing factor in our industrial world. Dr. James S. Plant, director of the Essex County Juvenile Court, Newark, New Jersey, asks: "Would it be too sophisticated to say that we do not today so much need to find ways for people to work as we need to find healthy and comfortable ways for them not to work?"* It is a matter of teaching contentment within one's self and with one's experience in life. This is the quest of the future.

The nurse reveals to parents the wisdom of bringing up their children to develop resources within themselves so that they may not depend exclusively upon outside stimulus for entertainment or amusement. She is not only helping the child of today, but the adult of tomorrow who will grow up able to use leisure more intelligently.

*From an unpublished lecture. See also James S. Plant, Personality and the Cultural Pattern. The Commonwealth Fund, New York, 1937.

REFERENCES

[1] Alschuler, Rose H., and Heinig, Christine. Play: The Child's Response to Life. Vol. II, Childhood—The Beginning Years and Beyond. Houghton Mifflin Company, Boston, 1936.

[2] Dodds, Caroline Bingham. "Our One Dollar Playground." *Parents' Magazine,* August 1934, p. 22.

[3] Children's Bureau, U. S. Department of Labor. Home Play and Play Equipment for the Preschool Child. Publication 238, 1937. Superintendent of Documents, Washington, D. C.

[4] Taussig, Charles William, and Meyer, Theodore, A. The Book of Hobbies. Minton, Balch and Company, New York, 1924.

[5] Van Alstyne, Dorothy. Play Behavior and Choice of Play Materials of Preschool Children. University of Chicago Press, Chicago, 1932.

[6] Lee, Porter R. The Family as a Constructive Force in Mental Hygiene. Report given at the First International Congress on Mental Hygiene, American Foundation for Mental Hygiene, Inc., 50 West 50 Street, New York, 1930.

[7] King, Elizabeth (Editor). Family Fun Department. *Parents' Magazine.*

[8] Kawin, Ethel. The Wise Choice of Toys. University of Chicago Press, Chicago, second edition revised, 1938.

Garrison, Charlotte. Permanent Play Materials for Young Children. Charles Scribner's Sons, New York, 1926.

Johnson, Harriet M. School Begins at Two. New Republic, Inc., New York, 1936.

Lee, Joseph. Play in Education. The Macmillan Company, New York, 1915.

Lehman, H. A., and Witty, P. A. The Psychology of Play Activities. A. S. Barnes and Company, New York, 1927.

Rogers, James E. The Child and Play. Appleton-Century Company, New York, 1932.

Trace, Margaret A. Block Building: A Practical Guide for Mothers and Teachers. Milton Bradley Company, Springfield, Mass., 1928.

Pamphlets

Hansen, Rowna. Some Educational Activities for the Young Child in the Home. Pamphlet 51, U. S. Department of the Interior, 1934. Superintendent of Documents, Washington, D. C.

Leonard, Minetta Sammis. Best Toys for Children and Their Selection. 2230 Van Hise Avenue, Madison, Wisc.

Playground and Recreation Association of America. Home Play. The Association, 315 Fourth Avenue, New York.

Wolf, Anna W. M., and Boehm, Edith London. Play and Playthings. Child Study Association of America, 221 W. 57 Street, New York.

PROGRAM ON OBSTETRICS AND GYNECOLOGY

THE American Congress on Obstetrics and Gynecology which is holding its first meeting in Cleveland, Ohio, on September 11-15, has announced the tentative program for the Medical Section as follows:

September 11—The thyroid and pregnancy; heart disease and pregnancy; diabetes and pregnancy; tuberculosis and pregnancy; nutritional factors and pregnancy; the surgical abdomen complicated by pregnancy; the treatment of abortions.

September 12—The new conception of ovarian neoplasms; carcinoma of the uterus; endometriosis; ectopic pregnancy; sterility in the female.

September 13—Reduction of the operative incidence in obstetrics; labor complicated by the contracted pelvis; dystocia due to soft parts; pathology and treatment of the third stage of labor.

September 14—Present-day fundamental knowledge of hormones and endocrine glands; problems of adolescence; problems of menopause; diseases of the mammary gland.

September 15—Sulfanilamide in obstretrics and gynecology; pyelitis; chronic pelvic infections; immediate and remote complications following labor.

The following round tables will run concurrently each day:

The toxemias of pregnancy; genital infections; obstetric and gynecologic hemorrhages; the fetus and the newborn; forceps, occiput-posterior, and breech presentation; anesthesia, analgesia, and amnesia in labor.

The joint program is as follows:

September 11—Afternoon: Neonatal care. Evening: Legal aspects of maternity.

September 12—Afternoon: Plans for prevention and control of uterine cancer. Evening: Humanitarian aspects.

September 13—Afternoon: Extension education on maternal and neonatal care. Evening: Sociologic aspects

September 14—Afternoon: Economic aspects of maternal care. Evening: Ethical aspects.

September 15—Afternoon: Correlation of and attempt to digest all proceedings.

Oxygen Therapy in Pneumonia

By DAVID D. RUTSTEIN, M.D. and EMMA H. MacCHESNEY, R.N.

The use of oxygen is a valuable supportive therapy in pneumonia care. The general principles and the specific methods of its administration are discussed here

THE USE of oxygen in the treatment of pneumonia is of the utmost significance in selected cases. Oxygen has no known specific action on the causative microörganism in pneumonia, as does type-specific antiserum. This basic difference between a *supportive therapy* such as oxygen and a *specific therapy* such as type-specific antiserum, as applied to pneumonia, is not always clearly understood by nurses.

Insufficient oxygenation of the blood of a pneumonia patient causes changes from the normal physiology. These changes may reasonably be supposed to be injurious, and they may therefore considerably influence the outcome of the illness. Such disturbances of physiology can frequently be obviated, or at least partially relieved, by the proper application of oxygen treatment.

Since proper application depends upon the faithfulness and efficiency with which the prescribed oxygen concentration is maintained, and since this is so frequently the responsibility of a nurse, it seems important that nurses should understand the nature of the physiological disturbances, underlying the need for oxygen treatment, and the essential points in the technique of its satisfactory administration.

INDICATIONS FOR OXYGEN THERAPY

It should be remembered that every individual needs oxygen for the normal functioning of the body. Oxygen consumption generally reaches its minimum during restful sleep and is increased by exercise or by any factor which speeds up the physiological functions of the body. Patients with fever need 7 percent more oxygen for each degree of temperature elevation. During pneumonia the oxygen requirement is increased by fever and dyspnea. Pleural pain often limits the respiratory excursion, resulting in shallow breathing, which in order to compensate for the small air intake, becomes forced and rapid. This in time results in more muscular effort and a greater oxygen requirement. Moreover, the alveolar air sacs and bronchioles are often wholly or partially blocked by inflammatory secretions which further impair the efficiency of oxygen absorption in the lungs. *Absolute rest*, which aside from specific therapy is the all important *must* for the pneumonia patient, is of value because it keeps the basal oxygen requirement at a minimum. The need for complete rest due partly to these facts forms the basis of pneumonia nursing.

When the difference between the increased demand and the decreased supply of oxygen becomes too marked, the patient may develop any one of the following symptoms or a combination of them: (1) cyanosis—which manifests itself by the presence of a bluish tinge in the nail beds and often in the lips and face—resulting from the fact that the hemoglobin of the blood does not

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receive a sufficient supply of oxygen in the lung (2) sustained rapid pulse, of which one of the major causes in pneumonia is insufficient oxygenation of the blood (3) sustained rapid respirations which are frequently accentuated by upper abdominal distention, pleurisy, or accumulated mucus in the bronchial passages (4) restlessness and delirium which often seem to be due, in part at least, to oxygen deficiency.

As indicated above, many other medical factors are involved in the explanation of the last three symptoms. But since oxygen treatment has been applied with varying degrees of success, where one or a combination of these symptoms have been present, it is frequently employed by physicians to relieve them. Since these symptoms are important as guides to the physician for beginning oxygen therapy, the nurse should realize the necessity of observing and reporting them immediately. She must be accurate and faithful in noting and recording the rate, volume, and regularity of pulse and respiration, the patient's color, and any change in his mental reactions, in order that the physician may have an exact picture of the nature and duration of any significant change.

The constant attendance of a resourceful and tactful nurse is indispensable in the administration of oxygen. This is particularly true with restless or delirious patients. The nurse's task is the difficult one of maintaining an adequate oxygen concentration under all kinds of circumstances.

PRINCIPLES OF ADMINISTRATION

There are several general principles of oxygen therapy which should be followed in order to insure adequate, safe, and economical treatment.

1. Since there are no facilities for the storage of oxygen in the body, oxygen should be supplied *continuously*, and the prescribed concentration (usually between 35 and 60 percent) maintained *constantly* as long as indications for its use are present. (The oxygen concentration in ordinary room air is about 21 percent.) Finally, oxygen withdrawal should be gradual. If the symptoms which prompted the therapy return during or after the withdrawal of oxygen, the physician will undoubtedly reestablish the therapy immediately.

2. It is of the utmost importance to remember that the concentrations of oxygen used favor combustion, and at times form explosive mixtures with air. Therefore, a warning should be hung on the door of any room in which oxygen is being used, saying that all flames, electric apparatus, and highly inflammable materials should be kept away. It is not uncommon for well meaning but poorly informed members of a family to supply cigarettes and matches even to a very sick patient. It will require constant awareness and vigilance on the part of the nurse to avert the danger of fire. In homes where electric lighting is not available, oxygen therapy cannot be safely carried out at night without a large flashlight, since the use of gaslights, oil lamps, candles, or any other open flame in the patient's room introduces a distinct hazard. All valves of the oxygen apparatus should be clearly labeled, "use no oil," and lubricating oil should not be used *in any part* of the oxygen equipment under any circumstances since high concentrations of oxygen coming in contact with lubricating oil have caused serious explosions.

3. It is important to state that there is no special "medical" oxygen. The ordinary industrial oxygen which can be obtained in an emergency from a local garage or mill in large 220 cubic feet (6000 liter) cylinders is sufficiently pure and perfectly safe to use. Although a reducing valve such as that indicated in the diagram is required in using these high-pressure tanks, they will still prove to be the cheapest type of oxygen supply for use over a period of time. Low-

pressure tanks are not only a more expensive way of supplying oxygen, but are also difficult to regulate.

METHODS OF ADMINISTRATION

Possible methods of administering oxygen therapy are:

1. Nasal catheter or metal cannula.
2. Oxygen tent.
3. Open-top oxygen tent or oxygen box.
4. Oxygen chamber.
5. Funnels and face masks.

Only the first two of these methods will be considered at length in the discussion since the others are either not satisfactory for use in the treatment of adult pneumonia or not practical for home use. The open-top oxygen box is of some value in the treatment of infants and small children, and will be described briefly.

CATHETER OR CANNULA METHOD

The simplest and most practical method of oxygen administration to a pneumonia patient at home is by the use of the nasal catheter or metal cannula. The principal disadvantages of this method are the slight discomfort attending its use and the limited concentration of oxygen available through its use. A single catheter (used as in the diagram, page 81) will supply a concentration of approximately 35 percent at a flow rate of 5 liters per minute, or 50 percent at a flow rate of 10-12 liters, which is the highest flow rate which can be tolerated with this method. Two catheters may be used, but they will provide very little increase in oxygen concentration to compensate for the additional discomfort of irritation to both nostrils simultaneously.

The metal cannula indicated in the diagram will supply oxygen concentrations slightly below these levels at the same flow rates. It is, however, slightly more comfortable than the catheter method.

When the oxygen tank is brought into the sickroom it should immediately be strapped firmly to the bed in an upright position in order to prevent accidents by overturning. Before the reducing valve is attached to the tank, the tank valve must be opened for a brief instant, "cracking the valve," in order to blow away any dust or dirt that may have accumulated in the oxygen outlet. If this is not done, the dirt will be blown into the reducing valve and may damage it.

After the reducing valve is attached, and before the tank valve is opened, the regulator on the reducing valve should be turned in a counter-clockwise direction for a few turns to make sure that the reducing valve is closed.

The reducing valve which brings the pressure of oxygen in the tank down to any desired point has two gauges. The first of these indicates the amount of oxygen remaining in the tank and must be closely watched by the nurse in order that a new tank may be brought to the bedside before the one in use is empty. The other gauge indicates the rate of flow of oxygen, by the height to which a metal ball is suspended in a glass cylinder by the force of the oxygen flow. This type of gauge is recommended because the ball will drop immediately when a complete or partial obstruction occurs at any point in the system. Dial gauges are frequently used, but they have the disadvantage of being easily sprung, and of not dropping when an obstruction occurs in the line. A complete obstruction in the line will also be indicated by the cessation of bubbling in the vaporizing bottle. Partial obstruction cannot be easily determined by this method.

The oxygen is conveyed from the reducing valve through a rubber tube to the vaporizing bottle. Dry oxygen is irritating to mucous membranes, and it is necessary to moisten the dry gas with water vapor. The vaporizing bottle may be improvised from a combination of a wide-mouthed bottle of 500 to 1000 cubic centimeters capacity, glass tubing, a two-hole rubber stopper, and glass beads or

copper screening. The glass inlet tube should reach within one-half inch of the bottom of the bottle. The water level should be not less than three inches above the end of this inlet tube in order that the oxygen be adequately moistened. Glass beads or copper screening immersed in the water around the end of the inlet tube will help to break up the bubbles and provide a greater contact surface between the water and the oxygen. It is important that the water level should at no time be high enough to bubble over and run down the outlet tube into the patient's respiratory tract. Therefore, the glass outlet tube should be short, projecting only about one-half inch below the under surface of the stopper, and the water level should be at least two inches below the tip of the glass outlet tube.

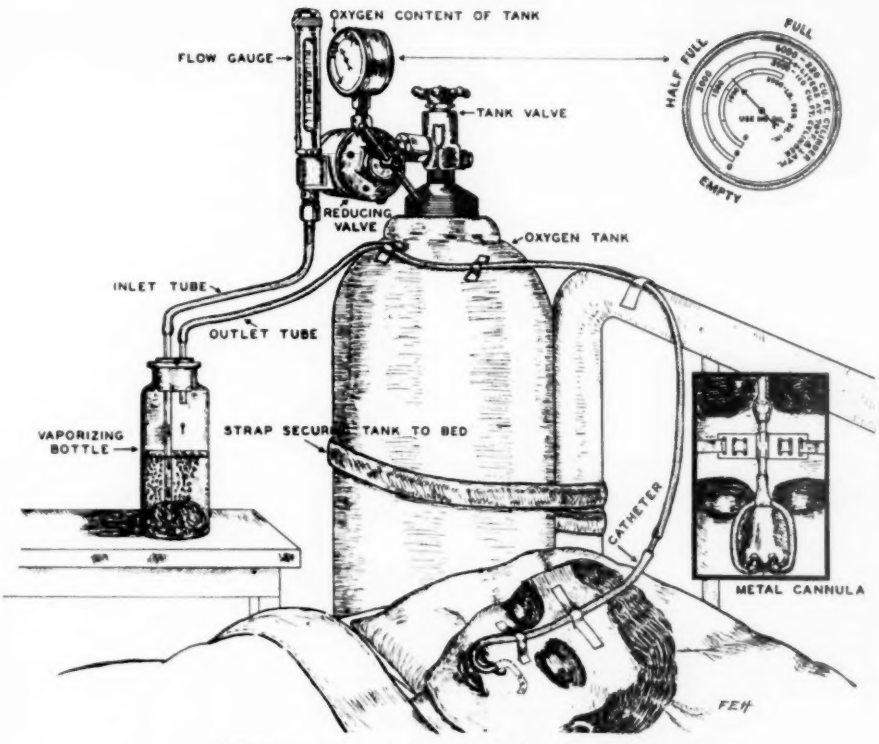
From the vaporizing bottle the oxygen is conducted through a rubber tube to the catheter or cannula. If a rubber catheter is used, a size 10 to 12 French urethral catheter will be found most satisfactory. It is attached to the rubber outlet tube by means of a glass adapter. A few extra holes should be cut in the terminal inch in order to avoid obstruction of the outflow by mucus, and to prevent the entire oxygen stream from being directed against one spot on the mucous membrane. Care must be taken that rough edges are not left when cutting these holes. The use of a hot wire as a perforating instrument will eliminate this. The tip of the catheter may *safely* be lightly lubricated with mineral oil before being gently inserted into the nostrils. This—in distinction to the other use of oil indicated as dangerous—is a perfectly safe procedure, probably because the mucous membrane readily conducts any accumulated heat away. The oxygen is turned on, and the catheter is inserted with the oxygen flowing. The approximate position of the catheter, with the tip lying just behind the uvula, is indicated in the diagram. Care must be taken to secure the catheter to the patient's forehead with adhesive tape in order that it will not fall out, or drop down into the esophagus and cause acute dilatation of the stomach.

The catheter should be changed at least every eight hours, or as indicated, with as little interruption of oxygen supply as possible. This may be done by either of two methods. An unobstructed lubricated catheter is introduced in the opposite nostril in the identical position; and with the oxygen still flowing, the feed line is detached from the old catheter and immediately attached to the new catheter. The old catheter is then removed. A method preferred by some is as follows: The old catheter is removed first; the feed line is then detached, and a new catheter attached; with the oxygen still flowing, the catheter is reinserted into the opposite nostril. After the used catheter is removed, it may be soaked in disinfectant for a short time or boiled immediately for five minutes, and then washed and dried. The alternate use of each nostril allows the recovery of one side from irritation while the other is being used. Mineral oil should be instilled into the nose and swabbed on the throat every few hours to help keep mucous-membrane irritation at a minimum.

When the metal cannula is used, it is attached as indicated in the diagram, and cleaned when necessary in the same manner as the rubber catheter.

OXYGEN-TENT METHOD

The oxygen tent is an excellent method of therapy in pneumonia when high concentrations of oxygen are necessary. It is specifically indicated in those cases where the catheter or cannula method cannot supply a concentration of oxygen adequate to relieve the existing symptoms, or where these methods are poorly tolerated by the patient. Concentrations of oxygen up to 70 or 80 percent



Catheter or cannula method described on pages 79-80

can easily be maintained in any well designed tent. Such a tent should be noiseless, and should have a capacity of at least eight cubic feet for an adult. It should be provided with a cooling, dehumidifying apparatus; a canopy made with material impervious to oxygen which contains noninflammable windows; a soda lime chamber for removing carbon dioxide from the expired air; and preferably, a motor blower for circulation.

While the tent is usually more comfortable for the patient than either the catheter or cannula, it is a more expensive and more complicated method of supplying oxygen for routine treatment in the home, and it requires the constant attendance of a trained nurse or technician. In addition to the details regarding oxygen tanks and valves described above, there are a great many precautions that must be rigidly observed in order to achieve satisfactory results with the tent method.

Recent experimental work has shown that the oxygen concentration in the tent can be maintained at a relatively high level during nursing care and bedmaking, providing the following technique is followed:

Foundation bed

The foundation bed should be made as follows: The mattress is covered with a full-length rubber sheet to prevent the seepage of oxygen. The rubber sheet is covered with a quilted pad or blanket. A bottom sheet is then applied in the usual manner, with mitered corners. Above this another sheet is placed with the selvage edge flush with the top edge of the mattress, without tucking it in at the head or mitering the corners. The sides of this sheet are tucked in under the mattress. The pillow, top

sheet, and blankets are put on in the usual manner.

The tent

The tent should be completely prepared for use before being brought into the sickroom in order to spare the patient unnecessary disturbance. It should then be wheeled in and placed at the bedside. The oxygen should be turned on and should flow at a rate of 10-15 liters per minute for a few minutes prior to and during the placing of the canopy over the patient. In order to form an airtight compartment, the canopy should be tucked under the mattress at the head and along the sides of the bed. The front of the skirt of the canopy is secured between the folds of a sheet, the ends of which are then tucked under the mattress at both sides of the bed.

The openings in the canopy used for attending the patient should be small. They should be opened for as short a time as possible, and manipulated so as not to allow leakage around the arm. The rate of oxygen inflow should be increased for a few minutes by opening the by-pass valve before and after opening the canopy or changing the bed, as well as when the oxygen tank is changed or when the ice chamber is refilled.

During the bed-making or the giving of the bath, the flow of oxygen should be increased as prescribed by the physician—which will usually be about twice the maintenance level. The sides of the canopy should be released and immediately folded under the pillow, the excess canopy being drawn up and tucked under the head of the mattress. The front of the canopy already folded in a sheet should be drawn up and tucked so that the folds conform to the shape of the neck and body of the patient. The blankets and top sheet can then be removed, the bath blanket applied, and the bath given. In changing the bed, the sheet directly under the patient can be easily removed without disturbing any portion of the canopy or the foundation sheet. If this procedure is followed, there will be only a very small decrease in the concentration of the oxygen in the tent. Changing the pillow cases will of necessity involve disturbing the canopy. It is desirable, if possible, to have fresh pillows ready before removing those in use.

In the airtight compartment formed by the tent and bed the only oxygen available to the patient is that coming into the tent from the oxygen tank. It is, therefore, the physician's responsibility in placing a patient in such a tent to make sure that the nurse or other attendant will maintain a safe concentration of oxygen. It is perfectly possible that due to errors in operation or mechanical flaws, the oxygen concentration might drop to dangerously low levels. It is essential, therefore, that an analysis of the tent air be made about every three or four hours, day and night, so that the concentration of oxygen is maintained according to the physician's prescription. This analysis can be performed by means of a simple analyser which will be supplied with the tent. The directions supplied with the analyser should be specifically followed. At present there is no tent "which is so perfected that analysis is unnecessary." For a short time after the canopy is placed over the patient, frequent test analyses by the physician, nurse, or technician should be made in order to determine the rate of flow which will supply the concentration necessary to relieve the patient's symptoms. The physician should then specifically prescribe the concentration of oxygen to be maintained.

An air-conditioning unit

The oxygen tent is also an air-conditioning unit which can give great comfort to the patient if properly handled. An efficient oxygen tent should not only

supply oxygen to the patient, but should serve to regulate the temperature and humidity, and keep the carbon dioxide concentration below 1.5 percent.

The usual temperature range in the tent should be in the region of 58 to 68 degrees Fahrenheit, but in any case it must be adjusted to the comfort of the patient and the season of the year. If the temperature within the tent is too high, the humidity will build up to dangerous levels, and heatstroke may ensue. The evaporation of perspiration and the moisture exhaled are responsible in the main for the high humidity level. On the other hand, if the temperature within the tent is kept too low, the cold air may cause severe protracted paroxysms of coughing. It has been observed that individuals seem to tolerate higher ranges of temperature in the summer and lower ranges in the winter.

The ice chamber of the tent should be filled with pieces of ice each about the size of a baseball. During very hot weather it may be necessary to use a salt and ice mixture in order to lower the temperature to a satisfactory level. Every tent should have a by-pass around the ice chamber to allow uncooled oxygen to enter the tent if the temperature becomes too low. The ice not only lowers the temperature, but also dehumidifies the air by condensing the moisture, in the same way that a cold windshield condenses the moisture in a heated closed automobile. In most tents with motor blowers the humidity will automatically be adjusted below dangerous or uncomfortable levels if the temperature is properly regulated. A thermometer should be kept in the tent constantly in full view of the attendant, and the temperature should be recorded every two hours on the clinical chart.

Tents with motor blowers are much more effective in reducing the humidity within the tent than those depending on a stream of oxygen and convection currents. The motor blowers present the disadvantage of requiring provision for electric current, and occasionally treatment may be interrupted by motor failure. This electrical apparatus is so encased as to eliminate any danger of fire or explosion. It is also important that repair parts be within reach in the event of an emergency in order that the interruption of therapy may be as brief as possible.

Most tents are equipped with a compartment containing a removable basket filled with soda lime to absorb carbon dioxide, although it is possible by the use of high rates of flow of oxygen to keep the carbon dioxide concentration below 1.5 percent without soda lime. Since the latter method requires a flow of at least eight to ten liters of oxygen per minute, however, the additional oxygen necessary may be more expensive than the cost of the soda lime. With continuous use of the tent, a gallon of dry soda lime will last from four to five days depending on the rate of flow of oxygen and the amount of carbon dioxide produced by the patient.

Following every use, the tent canopy should be cleaned by a thorough scrubbing with soap and water, both inside and outside, and then should be dipped for five minutes in a 1-10,000 solution of bichloride of mercury, and rinsed with water. Exposure of the tent to sunlight and fresh air for a few hours following this cleansing may be of some additional value.

It is evident from this description that it is dangerous to operate a tent unless an intelligent full-time nurse (or other individual trained in the use of oxygen tents and analysers) is on duty. The nurse should be thoroughly familiar with the operation of the tent and know how to use the oxygen analyser. When such service is not available, the catheter or cannula method should be used even though an oxygen tent might be preferred for other reasons.

OTHER METHODS

The *open-top tent* or *oxygen box* has been found of value in the treatment of infants and young children where the arms of the patient remain inside the tent. In adults the isolation of the head from the rest of the body by the neck band causes many patients discomfort, at times extreme, because they cannot reach their mouth or head. Furthermore, nursing procedures must be done from above in these tents, and in the case of an adult propped up in bed it may be very difficult for the nurse to reach into the tent. It is of the utmost importance that open-top tents be protected from air currents, since these may flow in and out of the top of the tent and make it impossible to maintain a therapeutic concentration of oxygen.

The *tube-and-funnel* method of oxygen administration has enjoyed great popularity, due to its simplicity. However, actual measurements of the inspired air of individuals receiving oxygen by this method show it to be completely worthless in pneumonia.

The *Haldane oxygen face mask*, or modifications of it, as well as the *box mask* are effective only in those conditions which do not demand continuous therapy. Coughing, expectorating, drinking, and eating all cause interruption in the supply of oxygen by these methods. They are not, therefore, satisfactory in pneumonia where the supply of oxygen must be continuous.

While the oxygen chamber probably represents the ideal method of oxygen administration, it is practical only for the treatment of pneumonia patients in hospitals, and discussion of its merits is beyond the scope of this paper.

NOTE: This is the third of a series of three articles on various aspects of pneumonia care. The first article, "The Rationale of Pneumonia Nursing Care," by Dr. Alexander D. Langmuir and Emma H. MacChesney, appeared in November 1938. The second, "The Serum Treatment of Pneumonia," by Dr. Edward S. Rogers and Emma H. MacChesney, appeared in December 1938.

Grateful acknowledgment is made to Mrs. Florence Hohle, Division of Vital Statistics, New York State Department of Health, for the illustrations in this series of articles.

REFERENCES

Du Bois, Eugene F. Basal Metabolism in Health and Disease. Lea and Febiger, Philadelphia, third edition revised, 1936.

Finland, Maxwell. "Modern Treatment of Pneumonia." *The American Journal of Nursing*, January 1936, pp. 24-32.

Hawthorne, Margaret J., Henderson, Virginia, Montag, Mildred, and Warfield, Marguerite D. "Oxygen Therapy." *The American Journal of Nursing*, November 1938, pp. 1203-1216.

Mercer, Evelyn. "Nursing Care in Lobar Pneumonia." *The American Journal of Nursing*, November 1937, pp. 1211-1218.

New York State Department of Health, Bureau of Pneumonia Control, Division of Communicable Diseases and the Division of Public Health Nursing. Handbook on Nursing Care of Pneumonia. Circular 19. Single copies may be obtained free of charge upon request from the Metropolitan Life Insurance Company, 1 Madison Avenue, New York, N. Y.

Rutstein, David D. "Pneumonia—Practical Considerations of Oxygen Therapy with Special Reference to Home Use." *New York State Journal of Medicine*, December 15, 1938, pp. 1548-1555.

The Nurse's Part in the Control of Cancer

By LOUIS C. KRESS, M.D.

The public health nurse should be well informed on the control of cancer since her contacts with families offer many opportunities for teaching about this disease

Part I

AN UNDERSTANDING of all aspects of the problem of cancer is an important part of the equipment of the public health nurse. It is a well known fact that patients, especially women, are apt to discuss their physical condition with a nurse whom they know before seeking the advice of their family doctor. This places the nurse in a key position. She has an opportunity to direct patients to the proper sources for medical care. A well informed nurse is an excellent medium for preventing an innocent person from falling into the clutches of the cancer quack.

During the past two years professional and lay groups have become more interested in the cancer problem than ever before. Nurses are seeking knowledge concerning this disease because of the demands made upon them by their patients, who are becoming aware of the fact that cancer is not such a hopeless disease as they once thought.

This series of articles is designed to review the symptomatology and treatment of cancer and to stimulate nurses to become more interested in the cancer problem. Nurses should avail themselves of the information to be found in current medical and nursing journals and in books dealing with cancer. Many nurses' alumnæ associations devote at least one meeting each year to a discussion of some phase of the cancer problem. The directors of schools of nursing are emphasizing cancer more each year so that the student is becoming more cancer-conscious. Useful information may also be obtained from studying cancer exhibits which are displayed at medical and nursing meetings and in schools and colleges.

Cancer is disseminated throughout the animal kingdom. It is found in fish, fowl, and animals as well as human beings and there is also an analogous disease in plant life. The early writings of Egypt and India mention cancer, and references are made to this disease in the Bible. Malignancies have been described, studied, and treated down through the ages. History records that there were surgeons about the time of Christ who devised operative methods for the eradication of breast cancer.

It has been only within the past few years, however, that knowledge concerning cancer has been offered to the general public. It is believed today that such education is one of the best methods of cancer control, since it gives the average person the important facts regarding cancer, enabling him to prevent its occurrence or to discover it in the early stage. The solution of the cancer problem in a large measure lies in education of lay people as well as professional groups. It is disheartening to erect and maintain large, well equipped hospitals and clinics manned by trained surgeons and radiologists when they are called upon to treat only patients who have far-advanced cancer. The outlook under these conditions is not very promising; but by means of education these patients can be discovered when their disease is in its incipient stage and is

more amenable to treatment. Of course, far-advanced cancer is not always hopeless and occasionally miraculous results are obtained.

Cancer ranks second only to heart disease as a cause of death in this country, taking a yearly toll of 140,000 lives in the United States. Many of these people could be saved if they had the opportunity of learning the truth about cancer. The nursing profession in coöperation with doctors and dentists should take the initiative in this important combat against cancer.

IS CANCER PREVENTABLE?

Cancer is a preventable disease in many cases. Prevention is accomplished by removing or treating a source of irritation. A notable example is found in the mouth. A clean mouth in which good oral hygiene is practiced is generally free from cancer. A man may smoke and yet protect his lips. If he knows the signs of irritation he will never allow a lesion of the lip to become cancerous. A crack, sore, or fissure appearing anywhere on the skin may be a forerunner of cancer and if allowed to continue without treatment may eventually develop into a malignant growth. Under this category of precancerous lesions are kraurosis vulvæ, lupus vulgaris, hyperkeratosis, and moles. Any abnormal discharge from any cavity of the body should be investigated because it may be the first sign of a precancerous or a cancerous lesion. Every lump in the breast should be considered cancer until proven otherwise. The best method of determining the character of such a lump is its excision and examination under a microscope. A mole or birthmark after appearing innocent for several years may begin to show signs of activity evidenced by a change in size, shape, or color; or it may become irritated by some garment, causing it to bleed. A dark mole which is the color of coal should be removed immediately upon discovery because once this type of growth becomes active it disseminates quickly to all parts of the body.

WHAT IS THE CAUSE OF CANCER?

Research workers have to date been unable to isolate any form of bacteria as a cause of cancer. Many such reports have appeared in medical literature but none has been substantiated. However, experience has proved that cancer is not communicable. As far as can be ascertained no doctor, dentist, or nurse has ever been known to acquire the disease by coming in contact with it. Therefore, nurses should not be afraid to take care of cancer patients. Fear concerning cancer has been handed down from generation to generation, but by supplanting ignorance with proper information this fear can be abolished. Appendicitis is not dreaded today, because we know that it is curable by means of surgery and we are familiar with the symptoms of this disease. Likewise, the knowledge that cancer is curable should be broadcast far and wide and people should be taught to discuss cancer freely.

There are certain facts concerning cancer with which every nurse should become familiar. She may often be asked the cause of cancer. From present experimental data, chronic irritation—whether it occurs within or without the body—is recognized as a possible cause of cancer.

Some of the common forms of chronic irritation are the hot pipe-stem and the combustion products of tobacco, which are often associated with cancer of the lip; ragged and jagged teeth and poor oral hygiene, which may result in cancer of the oral cavity; the elements, such as rain, sleet, snow, sun, and wind, together with chemical irritants such as soot, oil, and tar, which may cause cancer of the skin; vaginal discharges, terminating in cancer of the cervix. Irritation may be classified as biological, chemical, or physical. There is a group of tumors

which can be traced to no demonstrable form of chronic irritation. These are thought to arise from embryonal rests—fragments of embryonic tissue that have been retained within the adult organism.

IS CANCER HEREDITARY?

At times cancer occurs in several members of the same family. However, cancer is not considered an inherited disease. Parents cannot transmit cancer directly to their offspring. The only known hereditary factor relative to cancer is the tendency toward inheriting tissues of the body which cannot withstand chronic irritation. An individual with a family history of cancer should not worry about having cancer; but he should take necessary precautions, such as periodic health examinations to determine his physical status. If any symptoms suspicious of cancer arise—such as an abnormal discharge from any cavity of the body, a persistent crack, sore, or fissure, or a lump in the breast or some other organ—he should be particularly prompt in seeking medical advice. These precautionary measures apply of course to everyone, whether or not there is cancer in the family.

SURGERY, X-RAY, AND RADIUM

The recognized treatments for cancer are surgery, x-ray, or radium, used alone or in combinations. In some types of early cancer, surgery is the method of choice; for instance, a malignancy of the cervix uteri which has not ulcerated and is merely a small nodular growth. However, it is a well known fact that lesions of the cervix are usually far advanced when discovered and are best treated by a combination of x-ray and radium. Stomach cancer is remedied by surgery, as radiation has no effect on this type of malignancy except in the case of the rare lymphosarcoma of the stomach. Surgery combined with radium or x-ray is the general therapeutic measure for cancer of the breast. Every cancer patient is treated as an individual and the type of treatment should be left to the discretion of the examining physician or surgeon. It must be remembered that cancer surgery differs from ordinary surgery and at times must be very radical in order to effect a cure.

X-ray application is a relatively new branch of medicine. The x-ray tube was discovered in 1895 by Professor Wilhelm Konrad Roentgen and all of the progress that has been made in this science has occurred during the present century. X-ray machines are of different capacities, ranging from 140,000 to 1,000,000 volts. The passage of large amounts of voltage through these tubes necessarily means that a large amount of heat is generated within them. This heat must be expelled—which is accomplished by cooling the tube with circulating oil. If the tube were not cooled, parts of it might become overheated and melt, causing the patient bodily harm. The amount of x-ray is measured accurately and the unit of measurement is called an *r*. Physicians write prescriptions for x-ray and radium as they would for a narcotic or a stimulant. The application of radium and x-ray is an accurate science and is a specialized branch of medicine like surgery or obstetrics.

While receiving x-ray treatment, the patients experience no unusual sensation, but after the course is completed a reaction occurs on the skin over the area treated. This reaction may vary from a slight redness to a severe blistering termed *epithelitis*. This is only a temporary damage to the skin which will heal in a short time, the period depending upon the severity of the reaction. Some patients experience nausea and vomiting during a course of x-ray or radium therapy, while others notice no constitutional effects.

X-ray treatments do not consume as much time as radium treatments. The character of the ray produced by the

higher voltage x-ray machine is not as short and hence not as penetrating as the ray emitted by radium. It has been estimated that the voltage must approach about two and one-half millions in order to duplicate the gamma rays of radium.

Radium was discovered by Professor and Madame Curie in 1898. It is found in a limited number of places, including California, Colorado, Australia, Canada, and the Belgian Congo in the heart of Africa. The last two mentioned have the most productive ore. Radium is very expensive because it requires twelve tons of radium ore, three tons of hydrochloric acid, five tons of sodium carbonate, one ton of sulphuric acid, and ten tons of carbon to produce 100 milligrams of radium. (A milligram is 1/1000 of a gram; a gram is 1/30 of an ounce.) Radium appears like dirty table salt, being grayish white in appearance. There are soluble and insoluble salts. The soluble salts of radium can be absorbed in hydrochloric acid and barium chloride. After radium once begins to give off its rays it never ceases until all of its energy has been used. This takes many years, as radium loses only half of its strength in 1690 years.

As radium disintegrates it gives off a gas which is called *radon*, and which is the active part of radium. When radium is placed in solution, the gas can be collected and forced by means of oil and mercury pumps into small gold capillary tubes which are cut and sealed so that the radium cannot escape. These small gold containers of radon are called "gold seeds." They can be planted directly into cancerous tissue to become a part of the tumor. They are encased in a fibrous tissue or discharged from the body when the cancer sloughs away. If radium itself is placed into tissue, it must be removed after a specified time because in this form the source of energy is almost constant (losing half strength in 1690 years, as stated above).

When the radium seeds are used, the source of energy diminishes rapidly, losing one half of its strength in four days. When radon is used, it is designated by the term *millicurie;* and when the radium salt is used, the term *milligram* is used.

The dosage of radium when expressed in hours is usually the result of the amount of radium multiplied by the time; or the dosage can be expressed in *r* similar to the manner used for x-ray. There are different types of radium therapy. When radium or radon is placed directly into tissue, it is called *interstitial radiation;* when placed against the growth, it is called *contact radiation;* when placed into a cavity, it is called *intracavitary radiation;* when placed by means of a pack or bomb at some distance from the growth, it is called *teletherapy*.

EFFECTS OF RADIATION

X-ray and radium have an affinity for rapidly growing or dividing cells, and tissues which grow quickly are more susceptible to radiation. If cancer of the skin is treated with x-ray, a margin of normal tissue is included in the x-ray field because if all of the cancer cells are not destroyed there is likely to be a recurrence. The cells of normal tissue have attained the stage of adult growth, and although they react to radiation, the reaction is not to the same degree as that of the cancer cells. The normal tissue cells recover from the damage and fill in the gap produced by the complete destruction of the cancer tissue.

The application of radium and x-ray does not stimulate the growth of cancer but retards or destroys it. At times in spite of the application of radium and x-ray a cancer will continue to grow. Such a growth is not stimulated by the therapeutic agents, but is of such a nature that the amount of radium or x-ray applied is insufficient to retard the rapid growth. It is generally believed

that if every cancer could receive enough radiation, it could be destroyed.

Some types of cancer require more radiation than others and some types are only slightly sensitive. Other factors which play an important role in the destruction of the growth are the location of the cancer, the degree of involvement, and the amount of x-ray or radium that can be placed in a cancer.

This is the first of a series of three articles by Dr. Kress on various aspects of the problem of cancer. The second article will appear in the March issue.

(To be continued)

Selling Health in the Mountains

By EDITH L. TIFFANY, R.N.

A colorful tale of a nurse's work with the hill people of Eastern Tennessee, where the health department is introducing itself to a people hesitant to accept change

IN SOUTHEASTERN Tennessee is found one of the most typically rural sections of the South. Surfaced with gently rolling hills which rise gradually in the east to form the Unaka mountain range of some five thousand to six thousand feet, Monroe County is well covered with forest and verdant vegetation. It has an area of 673 square miles.

Except for four towns of between one and two thousand inhabitants and a few prosperous river-bottom farms, the population of 21,000 people live largely on small hill farms. Here and in the lowlands the soil is most productive, offering a plentiful living to the hard-working and thrifty owner. The standards of living range all the way from those of the independent and self-sufficient landowners with ideals demanding the best for themselves and their children down to the indifferent, lethargic type of farmer making and desiring only a bare existence.

The mountain people and small tenant farmers are to be found in one- or two-room unpainted board or log shacks tucked back under the trees or pinned none too steadily to the red soil of a hillside. Kinfolk live closely together. Therefore, a community is usually known as the "Welch settlement," the "Atkins settlement," and so on—all purely Anglo-Saxon names familiar to the mountains for generations and rarely changed to that of a "furrin-sounding" one. From five to twelve or thirteen individuals may share corn bread, "sow belly," molasses, and white beans together under one roof. This number is usually matched by nearly as many "houn' dogs" which invariably show a better state of nutrition than the shy, barefooted youngsters running about. These dogs are a carry-over from past days when they were all-important to their owners for food-getting, and when whole packs abounded in every section. A good hound is a pride to his owner, who delights in rabbit- and fox-hunting with his equally valuable gun. The incidence of gunshot wounds is high, due to the prevalence of firearms in every home; these are used not only for hunting but for settling frequent disputes—smelling often of corn whiskey.

The social life of the people consists of neighborhood visiting and church

going, particularly to the special "meetin's" and revivals which often come in August and are called "Big Augusts." These may be held in the church or out in the open under a brush arbor made in the woods. Reading matter in the home rarely goes beyond the Bible, some free literature, and always a supply of patent-medicine information.

There never seem to be enough beds to go around even with a pallet on the floor for the "least" ones. However, in spite of grime elsewhere, a clean tufted or white sheet always covers the straw mattress. Crowded sleeping conditions, together with the ever-present family dipper in a bucket of spring water may explain in part the high incidence of certain communicable diseases.

PROGRESS SLOW BUT SURE

The health department is introducing itself to a people hesitant to accept change. It is supported by funds from the State Department of Public Health and the United States Children's Bureau, and by an appropriation from the county. The county is making a tax levy of approximately six cents on each $100 of taxable wealth. There is a health officer in charge of the health department, which includes two nurses, a sanitarian, and a clerk. The program is generalized.

Chest clinics are held at the county seat once every six weeks and are now well attended. At present this service is largely a case-finding one; follow-up visits in these homes are limited in value since they cannot improve material conditions. The service is educational, teaching that tuberculosis is not a disease sent by God and therefore to be endured but one that can be treated effectively. At present there are no hospitals or sanatoria for the treatment of patients.

Some progress is being made throughout the 76 schools, especially in the four-town institutions. Two of these have active parent-teacher associations which have been invaluable aids in the promotion of health.

A happy addition to the department's equipment is a movie projector. Not only the town schools but the most distant mountain groups are shown the importance of health habits through pictures. It has been found that much more is gained through this method of teaching than by talking. Hand-washing drills before lunch and individual drinking cups have at last been made a part of the school routine.

DISTRUST OF NEW WAYS

Even yet, however, the school health examinations held once a year may cause disturbance and distrust not only among the children but among their parents. This was rather humorously demonstrated when the following note of indignation was sent to the teacher by an excited mother whose child went home saying she was expected to take a towel to school that day since the doctor and nurse were coming. Mother and daughter must surely have expected a general cleaning up (not that it would have been out of order) for the note read:

> miss jenny kelly, i will bath my own girl. i give her a bath once a week and i thank that it nuft. you better not let them bath her and if thaey do and make her sick i will see what i can doe with them.
>
> MIS JAKE WOOD

This outburst followed a notice sent to the parents inviting them to attend school with their children the day of the physical examinations!

Immunization clinics are attended better than any other clinics held. The mountain people believe that the typhoid fever inoculation is good for their blood and that it "cuts down the rheumatiz," so they flock in. One old man with a suspicious odor of home brew clinging to him followed the health department car to three different country schools

where the clinics were scheduled—all miles apart—offering the "shot giver" first five cents, then ten cents, then fifteen cents for just one more of "them bracing monopulations"!

While the schools are nearly all on recently hard-surfaced roads and easily accessible, the home calls demand both gasoline and strong arches. When the boulders of a creek bed endanger an oil pan at every spasmodic leap; when the thin red soil of a narrow road is as slick as glass from a recent rain; when rear wheels writhe all too closely toward a steep jump-off—it usually prolongs life, limb, and car expense to change into pedal power. Not that anyone objects to this. For it offers a splendid excuse to appreciate the abundance of wild flowers and vistas of mountain and valley, as well as to make valuable contacts with the people of the community who never would unfold from their reticence and grow friendly toward a person who was ever in a hurry and unwilling to "stop and set awhile."

Not long ago a home visit was being made to an ever-growing family living down in a little clearing "two whoops and a holler" from the main road and reached only by a winding, rocky trail. Twenty-two individuals lived under this leaking roof and all bore the same surname. It was difficult to preach the gospel of cleanliness here even though there was a listless creek nearby. But the health "preacher" after nearly an hour of patient effort was congratulating herself with the thought that possibly she had gained a point. She had talked of everything from hoeing the cornpatch to a few well pointed words asking why the "young 'uns" had never been sent to school. But the principal theme had been the desirability of weekly bathing with perhaps a change of clothing, and the fact that this can be done without endangering life from sure "tisic" (the word for pneumonia and other chest ailments). The attack had been directed mainly against the piling on of more and more thicknesses until four and five layers were being worn, all sewed on the body for the winter except for an occasional "latch pin" (safety pin) ornamenting an outer grimy garment.

In one corner sat a grizzly old man, silent until now but aiming his tobacco juice frequently and accurately over any intervening heads into the cracks of the fireplace. At last he glanced up and with a sardonic quirk defied: "Humph, you've a pile of room to take on so. You've been a-wearin' that same old blue dress every time you-all been a-comin' to these parts for the last five months!"

"STILL, WE WANT HE SHOULD WALK"

The brightest spot in the work is the program for crippled children, the success of which has been largely due to the support of the American Legion and the state crippled children's service. The county has a full share of crippled children for which nothing has ever been done or can be done if the matter is left to the parents. Three years ago the Legion stepped in, giving both financial and moral support. It has become the duty of the health workers to locate cases, and to persuade timid, fearful parents to send their child out among strangers for a series of treatments which they are in dread of and can not understand. Later when the child has been finally hospitalized and then sent home he is carefully followed up for a continuance of treatment and further care.

Never does the worker catch a closer glimpse into the inner nature of these undemonstrative people than when approaching them on the subject of their handicapped children. Many adult members of the family have never been to the city and know nothing of what takes place in that sinister and mysteriously forbidding place—the hospital. Besides, "It's dog days," declares one

parent in worried argument. Or, "He is my baby-one an' they couldn't do nothin' with him," says another. "Still, we want he should walk," they all say in conclusion. It may take hours to convince them, but when at last they shakily and tearfully place their signature to the consent sheet they give themselves up wholly and completely to the care of those interested in their child.

This utter resignation, this utter trust and confidence is at times frightening to the one bringing it about—lest something might go wrong. But happily the work has been one with almost spectacular results which makes the hours of effort—and sometimes worry—of minor importance. The too fearful parents are usually taken along when the child goes to the hospital for the first time in order to dispel all erroneous ideas, and then sometimes special trips are arranged so they can see his progress with their own eyes and become accustomed to the hospital atmosphere.

Finally the great day arrives when a straight-limbed, plump youngster returns home to his silently adoring parents. The health department has never had more effective nor enthusiastic advance agents than those connected with a child thus returned. Their tongues temporarily unloosened, they are "mighty proud" to think that they saw it through. And no word is too strong or too good for all those responsible.

NURSE PLACEMENT SERVICE

N·P·S CHICAGO announces the following placements among those made in public health nursing:

Marianna Ward, Assistant to State Nurse Instructor, Department of Health, Baltimore, Md.

Goldie Davis, Educational Supervisor, Visiting Nurse Association, Muncie, Ind.

Alberta Wilson, Generalized Supervisor, Community Health and Civic Association, Ardmore, Pa.

Emma Haines, Senior Nurse, Visiting Nurse Association, Coatesville, Pa.

Therese DeJong, School Nurse, Central State Teachers College, Mt. Pleasant, Mich.

Leah Ramsay, School Nurse, High and Elementary Schools, Clinton, Ill.

Virginia Schnaare, Staff Nurse, Visiting Nurse Association, Detroit, Mich.

Aurora Karvi, Itinerant Nurse for Glacier Park, American Red Cross, Mont.

Tuberculosis Among Nurses

By J. ARTHUR MYERS, M.D.

Tuberculosis constitutes an occupational hazard for nurses, and the public health nurse should work toward controlling the disease among members of her own profession

THE PROBLEM of tuberculosis among nurses has long been recognized, but investigations of its actual proportions have been made only during the past decade. The large number of cases of the disease in nurses compares very unfavorably with the reduction of the number of cases in the general population. Because the incidence of positive tuberculin reactors among children and young adults in the general public has markedly declined, the high incidence of infection in students of nursing makes a sharp contrast.

Heimbeck of Oslo, Norway, found that only approximately 48 percent of the probationers in a large school of nursing reacted positively to the tuberculin test, whereas on graduation the remaining 52 percent had been infected.[1] Geer of St. Paul, Minnesota, tested students in the entering classes and found that approximately 30 percent reacted positively; but it was found that after the students had served on a tuberculosis service before graduation, the remaining 70 percent had become infected.[2] Jones of New Zealand tested 152 nurses by the Pirquet method and 85 percent reacted positively. The majority of the remaining 15 percent were still in the first two years of their nursing course. This finding suggested to him that a negative reaction becomes positive during the period in the school of nursing. In a comparable group of women he found there was freedom from the disease where there was no exposure to infection.[3]

In 1929 we instituted periodic examinations of student nurses in three private general hospitals. The program consists of administering the tuberculin test to all entering students, examining by x-ray the chests of those who react positively, and completing the examination of those whose films show shadows in the lungs to determine whether the shadows are due to tuberculosis. The admission to these schools of students who have tuberculosis in communicable form is prevented; thus, the students who enter are not exposed to the tuberculosis of their schoolmates. All the students who do not react to the tuberculin test on admission have the test repeated every six months as long as there is no reaction. Those who become positive reactors have x-ray film examinations of their chests immediately. Since different situations existed in the three hospitals, the infection attack rate among those students who were uninfected when they entered the schools is shown in the different results in the three hospitals.

COMPARISON OF THREE SCHOOLS

School I had a thirty-bed tuberculosis service in the hospital, which was operated on precisely the same basis as a sanatorium; and each student was required to spend three months on this service before graduation. Of all the students who entered the school from the fall of 1929 until 1937, 22.82 percent reacted positively to the tuberculin test on admission and 94.33 percent on graduation.

In School II the hospital had no tuber-

culosis service but admitted the occasional tuberculous patient for diagnosis and special treatment, such as collapse therapy. During one year of our observation, this school arranged for an affiliation with a sanatorium, where student nurses were to spend several weeks. However, the experience was not made compulsory. This service has since been discontinued. In this school, 23.88 percent of the entering students reacted positively to the tuberculin test on entrance and 43.56 percent were positive by the time they had completed the senior year.

The hospital of School III was larger than that of School II. There is no tuberculosis service and no affiliation with a tuberculosis sanatorium, but the occasional patient is accepted for diagnosis and treatment. Of the entering students in this school, 23.63 percent reacted positively to the tuberculin test, while 35.32 percent were positive on graduation.

COLLEGE VERSUS NURSING STUDENTS

The school of education of the University of Minnesota was also studied as a control group; that is, a group of students of approximately the same age as the student nurses, who had been reared in the same section of the country and now resided in the same community, were examined by the same procedures. Of the students who entered the school of education over the same period of time as those observed in the schools of nursing, 24.8 percent were positive; but only 28.5 percent were positive on graduation, so that approximately one student in a hundred became infected in each of the four school years. This is the approximate infection attack rate in this community as determined by additional studies.

From the figures obtained in the three schools of nursing and the school of education certain facts are obvious. In the school of nursing with a tuberculosis service nearly all of the students became infected. After all, this is what one might expect; yet it has been contended that it is safer for students to work on a tuberculosis service where they know that all patients have tuberculosis than on some other service where the occasional unsuspected case may exist. The infection attack rate in Schools II and III was not so great, and yet it was definitely higher than in the school of education. Therefore, from this study we were forced to conclude that it is much safer for a student to work in a general hospital that has only the occasional known case and the occasional unsuspected case of tuberculosis than in a hospital with a special tuberculosis service. At the same time it is more hazardous to be in a general hospital with only the occasional case of tuberculosis than in a school of education.

PRIMARY TUBERCULOSIS COMPLEX

Every student nurse who enters a school of nursing with a positive tuberculin reaction or becomes positive during her course has developed a primary tuberculosis complex somewhere in her body; usually, several such complexes are present. The defense mechanism of the body walls off the tubercle bacilli so effectively that the bacilli are confined to very limited areas. Because of the walls which surround them, the bacilli produce very little destruction—so little, in fact, that there is no serious illness. However, the defense mechanism is not sufficiently effective to destroy the bacilli, and walled-off colonies of them remain alive over long periods of time. Within from three to seven weeks after tubercle bacilli have invaded the body, the presence of the disease is manifested by a positive tuberculin reaction because the tissues are allergic to tuberculoprotein. The allergy of the tissues usually persists as long as bacilli are alive, which may be for the entire lifetime of the individual.

In the majority of persons who develop the tuberculous primary complex, the walls surrounding the tubercle bacilli are efficient, and more serious disease does not develop. In a minority group, however, the walls are broken or resorbed, and the imprisoned bacilli are liberated at some time during life. Because of the allergy already present, wherever they are deposited in the tissues very intense reactions occur. The defense mechanism does not control these reinfections as well as it did the first infection because of the presence of allergy. Larger areas are involved and the disease is likely to progress; in fact, this is the type of tuberculosis which causes nearly all the illness and death in the human family. Its beginning is the apparently simple and innocent infection which often manifests its presence only by a positive tuberculin reaction. Therefore, to allow a student nurse to become infected with tubercle bacilli is to allow a distinct health hazard to develop.

PREVENT INITIAL INFECTION

If patients become infected with the spirochæta pallida and the biological tests for syphilis are positive, we immediately attempt to disinfect the body by introducing drugs which have a germicidal effect on this organism. We would do the same for every student who becomes infected with tubercle bacilli and reacts positively if only we had an effective drug. Inasmuch as no such drug has been found and there is no other known method of assisting such an individual, we can only watch for the development of clinical disease, which may be controlled by treatment. For example, if it appears in a kidney, surgical removal may be indicated; if in a bone or joint, surgical measures may be necessary; if in a lung, collapse therapy may help. But these procedures are mechanical and none destroys all the tubercle bacilli or removes the allergic condition of the tissues. If the disease appears in the meninges, or becomes widespread over the body, we are entirely at its mercy. Our helplessness in controlling tubercle bacilli, once they gain entrance to the human body, emphasizes the importance of preventing the initial infection.

That such disease does develop in the bodies of infected nurses has been proved beyond doubt. For example, the Relief Fund Committee of the American Nurses' Association reported that between 1911 and 1930 there were 543 nurses who received aid; 258 of these nurses, or approximately 47 percent, were suffering from tuberculosis.[4] Likewise, Shipman and Davis of San Francisco, California, reported that between 6 and 7 percent of the student nurses developed clinical tuberculosis while in the school of nursing, and 4 percent more had the disease soon after graduation.[5] Ross of Ninette, Manitoba, found that among nurses 6 percent fell ill from tuberculosis during their nursing course or within one year thereafter.[6]

Jones made an inquiry into the incidence of tuberculosis among nurses in one of the New Zealand base hospitals. During 1930 and 1931 eleven cases of pulmonary tuberculosis occurred, which was an incidence of 3 percent per annum. Eight of these girls had served in a sanatorium; the remaining three had not, but two of them had been exposed to unsuspected cases of tuberculosis. The eight who had had a sanatorium service showed evidence of pulmonary tuberculosis within a year after their services.[7]

Ferguson of Fort Qu'Appelle, Canada, pointed out that on November 3, 1933, 6.36 percent of all patients under treatment by the Anti-Tuberculosis League of Saskatchewan were student or graduate nurses or hospital attendants. Among 2281 student nurses in general hospitals of that province between 1930 and 1933, 12.7 per 1000 fell ill from tuberculosis, which is twelve times the incidence of

tuberculosis in the general population and eight times the incidence among normal school students of approximately the same age.[8]

STUDENTS DEVELOP TUBERCULOSIS

In our observations of students of nursing we have seen serious illness develop following exposure to the disease in patients. Some of these illnesses occurred in students who contracted their first infection type of tuberculosis after entering the school of nursing, while others occurred in students who reacted positively to the tuberculin test on admission to the schools. The following cases are cited to illustrate some of the types of lesions which develop:

A girl of eighteen years enrolled for a five-year course of nursing in the fall of 1935. She did not react positively to the standard tuberculin test. In April 1937, her test was still negative. In June 1937, having completed her didactic work, she entered a hospital service. In January 1938, she fell ill, and early in February a diagnosis of generalized miliary tuberculosis was made. This represents the immediate hazard following the development of the first-infection type of disease, as generalized miliary tuberculosis is caused by the rupture of a focus of tubercle bacilli into one of the large lymphatic ducts or a blood vessel. The blood stream is fed with numerous tubercle bacilli, which are disseminated throughout the body, planting them in various organs, such as the liver, spleen, and lungs. The number of lesions is so large and the reactions around them so intense because of the allergic state of the tissues that the body is soon overwhelmed by them.

In October 1929, a girl of twenty years did not react to the tuberculin test on admission to a school of nursing. In September 1930, she had a strong positive reaction. Later small lesions appeared in her lungs and she was out of school for a year. When she returned, she was again exposed to a tuberculous patient. The pulmonary disease reactivated and she died in November 1936.

While a few of the students under our observation have died, the majority have responded well to treatment.

A girl of nineteen years did not react to the tuberculin test when she entered a school of nursing in 1928. Following exposure to tuberculous patients in 1930, her test was definitely positive. She was apparently well on graduation, but in October 1933 she had pulmonary disease involving the upper lobe of the right lung. Tubercle bacilli were present in the sputum. She has been treated successfully, and although her right lung is still under a state of collapse by artificial pneumothorax, her general health is excellent and she leads a normal life.

A girl of seventeen years reacted positively to the tuberculin test when she entered a school of nursing in the fall of 1930. X-ray films of her lungs revealed no evidence of disease. In October 1935, she was found to have advanced pulmonary tuberculosis involving the left lung with tubercle bacilli in the sputum. Artificial pneumothorax did not bring about a satisfactory collapse because of adhesions. Since extrapleural thoracoplasty was performed in the fall of 1936, she has been free from all symptoms.

A girl of twenty-one years reacted positively to the tuberculin test when she entered a school of nursing in March 1932. The x-ray films of her chest revealed no evidence of disease in either lung. In November 1932, there was evidence of a small lesion in the apex of the right lung. In March 1933, a definite area of disease appeared in the left lung also. Her sputum then contained tubercle bacilli. Bilateral artificial pneumothorax has since brought her disease under control.

HOW PROTECT NURSES?

A reduction of the working hours of nurses and providing them with more "fresh air," et cetera, have been offered as a solution of the problem. Unfortunately such factors are of little or no significance. In the final analysis tuberculosis has only one primary cause, namely, the tubercle bacillus. Nurses were not born with tubercle bacilli in their bodies, and therefore, everyone who reacts positively has had the bacilli transmitted to her from another person. In short, tuberculosis is a contagious disease; therefore, the only solution of the problem consists in protecting all nurses against tubercle bacilli. So far as the end result is concerned, it makes no difference whether a nurse becomes infected with tubercle bacilli from patients

in a sanatorium, a general hospital, or a private dwelling.

Again, the suggestion has been made that only older nurses engage in tuberculosis work. This is based on the supposition that all tuberculosis which will cause illness could be detected in the lungs by x-ray examination by the time the individual had reached the age of sixteen years. Scientific observation has disproved this supposition and likewise a similar division point at the age of twenty-four years. Indeed, tubercle bacilli may infect the human body for the first time whenever the individual comes in contact with a person who has the disease in communicable form. This infection may occur in infancy, old age, or at any intervening time. Moreover, the person who is infected in infancy or childhood may show no manifestation of the disease, aside from a positive tuberculin reaction, until the third or fourth decade of life or even later. Indeed, the tuberculosis mortality among women does not reach its peak in this country until about the age of thirty-one years and it continues high for some time thereafter. Therefore, there is no scientific evidence on which to base the opinion that the problem of tuberculosis among nurses would be solved by employing only those in the older age-group.

Another suggestion is to admit to tuberculosis work only positive tuberculin reactors; that is, those who already have primary tuberculosis complexes in their bodies. This suggestion is offered partially on the ground that the development of the primary complex has immunized them, but unfortunately, the immunity often is not sufficient. Burrell of London says: "But with tuberculosis there can be no question of getting from a first infection an immunity in any way comparable to that obtained by smallpox, mumps, or scarlet fever."[9] Chadwick of Massachusetts says: "There is without doubt a slight amount of immunity conferred by an infection with the tubercle bacillus, provided it is not excessive and the child has an average amount of resistance. However, it is important to remember that this immunity cannot be depended upon to prevent disease."[10] There is so little evidence that a primary tuberculosis complex immunizes the body against subsequent attacks that arguments in its favor can be given no weight.

Within six months to a year following the development of the primary tuberculosis complex there is some morbidity; that is, such conditions as pleurisy with effusion, tuberculous pneumonia, and occasionally chronic pulmonary tuberculosis may result. There is also some mortality, since the occasional person develops tuberculous meningitis or generalized miliary disease. Therefore, the nurses who already react to tuberculin constitute a selected group in that the immediate hazards have passed, provided their positive reactions have been present one or more years; whereas, in those who do not react to tuberculin but become infected while in the school of nursing or later, the immediate hazards are the same as they would have been had infection occurred earlier. However, the remote hazards are far greater than the immediate ones. Chronic lesions appear in the lungs, kidneys, bones and joints, et cetera, years after the primary complex develops; and even at this late time acute tuberculosis, such as meningitis and miliary disease, may also develop. These remote hazards are the same among nurses who begin their work with positive tuberculin reactions as among those who later become positive reactors.

In some parts of the country the percentage of girls who react positively to the tuberculin test at the age when they desire to enter a school of nursing is small. Indeed, if one were to admit to schools of nursing only girls who react positively to the tuberculin test, it would be practically impossible to find enough

applicants to fill the classes. In the three schools of nursing where we have made observations since 1929, the average percent of positive reactors on admission was approximately 23. On this basis, if a school admits one hundred girls, more than four hundred applications are necessary. In the later years of our observations, the incidence of positive reactors has been extremely low; in fact, 10 percent or less in some classes. On this basis, a thousand applicants would be necessary in order to have a hundred reacting positively to the tuberculin test. Moreover, one would not be able to give much consideration to such important factors as personality, scholastic attainment, and other qualifications.

Students of nursing as well as graduate nurses must be protected from the disease in other members of the personnel of the hospital in which they work; therefore, every person employed in the hospital should have precisely the same examination as the student nurses. There are cases on record of maids, librarians, orderlies, and other personnel working in hospitals over long periods of time while they had tuberculosis in communicable form.

Students and graduates in nursing must also be protected against exposure to patients who have communicable tuberculosis. In general hospitals an occasional patient who is admitted for one condition has coexisting communicable tuberculosis which is causing no symptoms—or the other illness is masking its symptoms. This means that every patient admitted to a hospital should immediately be examined for tuberculosis. In some general hospitals, all patients are tested with tuberculin on admission and those who react positively have x-ray film examinations of the chest. If the films reveal shadows which might be due to tuberculosis, the patient immediately has a complete examination to determine whether this disease is present in communicable form. Those who are found to have tuberculosis are not refused admission; but they are isolated and treated for the condition for which they entered, and also for tuberculosis, under strict communicable disease technique. Therefore, it is a relatively easy matter to protect nurses against exposure to such cases of tuberculosis in general hospitals.

RIGID TECHNIQUE IMPORTANT

Tuberculous patients must be treated and many need hospitalization. If the general hospital has a tuberculosis service or if the hospital has an affiliation with a sanatorium where nurses are required to have experience, a most rigid contagious disease technique must be practiced. Attempts have been made to protect nurses by employing a modified communicable disease technique but each one has failed, just as a modified technique would fail to protect against such diseases as diphtheria.

In one general hospital, a tuberculosis service has been established with a technique more rigid than on the ordinary communicable disease service. On this tuberculosis service, in addition to the usual technique, the shoes of all who enter are covered so that tubercle bacilli cannot be transmitted to others from this source. It does not require a large dose of tubercle bacilli to infect the human body, as we formerly believed; in fact, we must guard against even one bacillus entering the body of the nurse if we are to succeed in controlling tuberculosis.

Fear has been expressed that the facts which have been brought to light regarding the high incidence of tuberculosis among student nurses and recent graduates may create such fear in the minds of many persons that schools of nursing will not have enough applicants to fill their classes. Physicians have stated that they are unwilling to recommend a course in nursing for their daughters unless it can be taken in a school which is offering adequate pro-

tection against tuberculosis. They do not object to the assignment of work on a tuberculosis service provided a barrier is set up between the patient and the nurse which will prevent the transmission of tubercle bacilli. If the general public should become alarmed over the high incidence of tuberculosis in nurses, definite assurance can come only through the practice of a technique that will afford protection.

With the other contagious diseases we have set up technique for the protection of nurses despite the fact that for several of these diseases effective immunization agents are available. Very few parents object to their daughters taking a course in nursing because of the usual communicable disease service, since they know that every possible procedure is employed to afford them protection. It is paradoxical that with tuberculosis which is as contagious as diphtheria or typhoid fever, and for which we have no immunizing agent, there should be any hesitancy about protecting nurses against it through the employment of a most rigid technique.

Inasmuch as all phases of nursing begin with the student days, considerable emphasis has been placed on the problem of tuberculosis among students. It is in the schools that the fundamentals of communicable disease technique should be taught. While the tuberculosis problem in these schools must be solved, one must constantly bear in mind that a problem also exists for the graduate nurse. The extent of this problem depends on the phase of nursing she chooses.

THE PUBLIC HEALTH NURSE

In some types of public health nursing, tuberculous patients are visited in their homes. While the nurse's visits to a single home may not be numerous, yet with several patients under her care the total number of visits may be large in the course of a year. Evidence has accrued to show that prolonged intimate contact is not essential to the development of tuberculosis in the human body; a period of a few minutes suffices if tubercle bacilli are admitted to the body, since a few may multiply into large numbers in a short time. However, adequate technique such as that used on a communicable disease service in a hospital should place a sufficient barrier between patient and nurse to prevent transmission of bacilli.

No public health nurse would think of going into a home where smallpox or diphtheria exists in the contagious stage without exercising every possible precaution for her own protection, even though she had previously been immunized against these diseases. Tuberculosis is no less contagious, and therefore the same precautions should be practiced.

There is no doubt but that the number of contagious cases of tuberculosis in homes is rapidly decreasing. This has been brought about in several ways. First, the number of beds for tuberculous patients in sanatoria and hospitals is now adequate in some parts of the country, and in other parts plans are being made to provide for them. In these places the patient can be admitted to a sanatorium almost immediately after diagnosis. Second, medical directors of sanatoria and tuberculosis services in general hospitals strongly advise against discharge of any patient who has the disease in communicable form. Third, collapse therapy frequently renders the disease noncommunicable while the patient remains in the home.

Most certainly the first fact that every public health nurse should ascertain is whether her patient's disease is in the contagious stage. If so, it is not only her responsibility to protect herself but also to teach the members of the patient's family and other close associates how to avoid infection with tubercle bacilli. The public health nurse is among the very best of our health educators. While

she is protecting herself against infection or reinfection with tubercle bacilli, she can teach others in the home or in the community at large how to protect themselves against this disease. She can inform the members of her community that it is no longer true that sooner or later everyone must become contaminated with tubercle bacilli. She can point out that this fatalistic viewpoint might have been justified almost anywhere a quarter of a century ago and is still justified in a few sections of our large cities where little has been done to bring the disease under control, but that in many parts of the United States the number of communicable cases of tuberculosis has been so reduced that only approximately 1 percent of the population becomes infected each year. This means that it would require a thousand years before all the 1000 persons who are now infants would be infected for the first time.

There is good reason to believe that the infection attack rate will decrease, and that in the near future it will be considerably less than 1 percent. This is most encouraging and there is no one who is in a position to do more to help control tuberculosis in the community than the public health nurse. While this work among the general public is being accomplished through her influence she can do much to control the disease among the members of her own profession.

NOTE: This is the last in a series of articles on various aspects of tuberculosis control, beginning in April 1938.

REFERENCES

[1] Heimbeck, J. "Tuberculosis in Hospital Nurses." *Tubercle*, Vol. xviii, 1936, p. 97.

[2] Geer, Everett K. "Tuberculosis Among Nurses." *Archives of Internal Medicine*, January 1932, pp. 77-87.

[3] Jones, D. W. C. "An Inquiry into the Incidence of Tuberculosis Among Nurses in a New Zealand Hospital." *Tubercle*, Vol. xv, 1933, pp. 59-67.

[4] "Nurses' Relief Fund of the American Nurses' Association." *The American Journal of Nursing*, September 1930, p. 1119.

[5] Shipman, S. J., and Davis, Elizabeth. "Tuberculosis and Tuberculous Infection Among Nurses." *American Review of Tuberculosis*, Vol. xxvii, 1933, pp. 474-487.

[6] Ross, E. L. "Tuberculosis in Nurses." *Canadian Medical Association Journal*, 1930, p. 347.

[7] Jones, D. W. C. "An Inquiry into the Incidence of Tuberculosis Among Nurses in a New Zealand Hospital." *Tubercle*, Vol. xv, 1933, pp. 59-67.

[8] Ferguson, R. G. Special Bulletin of the Saskatchewan Anti-Tuberculosis League, 1934.

[9] Burrell, L. S. T. Recent Advances in Pulmonary Tuberculosis. P. Blakiston's Son and Company, Philadelphia, 1937.

[10] Chadwick, H. D. "The Massachusetts Program for School Tuberculosis Control." *School Physicians' Bulletin*, October 1934, p. 14.

THE AMERICAN JOURNAL OF NURSING FOR FEBRUARY

The Chronic Brucellosis Patient ..... Alice C. Evans
There's Nothing Wrong With Your Mind ..... Harry D. Kitson, Ph.D
Nasal Catheter Suction-Siphonage ..... John Randolph Paine, M.D.
Recording Suction-Siphonage ..... Rosemary Kehoe, R.N.
The Care of the Aged ..... Arthur J. Gavigan, M.D. and Evelyn H. Pettee, R.N.
A School for Negro Nurses ..... Hulda M. Lyttle, R.N.
Shall It Be Endowments? ..... Genevieve M. Clifford, R.N.
A Square Peg! Leaves from a Registrar's Diary
The Attendant on One Hospital Nursing Staff ..... Mabel S. Campbell, R.N.
Guidance Program in Schools of Nursing ..... Hilda M. Torrop, R.N.
Venereal Disease Work and the Nurse ..... W. Ray Jones, M.D., and Aileen Tuttle, R.N.
Hospital Personnel Policies ..... Henrietta Doltz, R.N.

The Nurse's Part in the Treatment of Children with Cerebral Palsy

By ELLEN M. COVELL, R.N.

Every nurse can discover children with cerebral palsy and refer them for proper care. In addition the orthopedic nurse gives home treatment under medical direction

A GROWING INTEREST is evidenced in the care of children suffering from various conditions which may be grouped under the heading, *cerebral palsy*. There is definitely a more hopeful outlook for the physically handicapped but mentally normal child. Today parents may reasonably hope that a child so afflicted will have opportunities for physical improvement, education, and vocational adjustment.

The fact that more opportunities for care of this type of handicap are being offered can be judged by the programs of different states and communities, among which may be mentioned the projects at the James Whitcomb Riley Hospital for Children in Indianapolis, Indiana, the Neurological Institute of New York in New York City, the Children's Rehabilitation Institute in Baltimore, Maryland, the Spalding School in Chicago, Illinois, and the Training School of Vineland, New Jersey.

Undoubtedly there are many other groups throughout the country working towards the same objectives. For the most part, however, these training centers are sporadic and usually experimental in character. Opinion regarding the care and the future of such children is not unanimous, and until such time as it is, there will be difficulty in securing financial support.

It has been suggested that the ideal plan for children with cerebral palsy is placement in institutions or schools where a complete study of the physical and mental needs of the child can be made, and both physical and mental training can be carried on at the same time. Such a program, however, would call for a large expenditure of money which is not at present available. And while many parents would welcome such an opportunity, others would be unwilling to send their children away from home. Day schools might solve part of the problem, but the cost of maintaining such schools with well trained staffs is prohibitive.

The number of children in the United States handicapped by cerebral palsy is not known. However, surveys have been made in various states. In Minnesota, for example, several surveys of crippled children have been made, on the basis of which it has been estimated that about 14 percent are cerebrospastics. There were only two other classifications higher—congenital deformities, 25 percent, and poliomyelitis, 20 percent.* It is reasonable to suppose from the Minnesota census that there are many thousands of children suffering from cerebral palsy of some type. If this is true, some way must be found by which they can take advantage of the opportunities now being planned for

*Hilleboe, H. E., and Harrison, Elma R. "Minnesota Plans for Its Crippled Children." PUBLIC HEALTH NURSING, October 1937, p. 570.

their improvement. The orthopedic public health nurse is offered a challenging opportunity in this branch of orthopedic and neurological nursing.

FINDING CEREBRAL PALSY CASES

As in the case of other orthopedic conditions, parents often bring their own children to agencies for care. Friends, nursing services, and hospitals are good sources for finding cases. Another source may be the pediatric clinic, where deviations from the normal will be recognized. It is important that the child's condition be discovered early, and that training, if indicated, be started promptly. Mothers are usually keen to notice what their babies can and cannot do and are anxious to seek help if they know where to obtain it. Since the birth histories of some children with cerebral palsy indicate that there has been trauma at that time, special attention should be paid to any symptoms in an infant that may indicate cerebral injury. Among these symptoms may be included convulsions, any undue muscle twitching, drooling after the age when this is normal in babies, inability to use an arm or leg, tenseness of muscle groups, and inability to raise the head or sit at the time when a normal child ordinarily does. Stuttering, thickened speech, or abnormal slowness in talking may also indicate trouble. Complications following certain childhood diseases may lead to cerebral palsy, and the nurse must be aware in these instances of the meaning of a weakened limb or inability to relax.

ORTHOPEDIC SUPERVISION

As soon as the child whose symptoms indicate some form of cerebral palsy is found, every effort should be made to place him under expert medical care. If a family can afford private care, the child should be referred to the family physician or to a specialist in this field. Many physicians welcome the assistance of the orthopedic public health nurse who is acquainted with the programs of clinics and schools for the training of these patients. The nurse in her visit to the home is able to observe many things which may be of value to the doctor who examines the child in the orthopedic clinic. She is able to report the reason why the child was referred, whether he has continuous motion, whether he becomes quiet when he sleeps, whether certain stimuli affect him more than others, whether he can finally reach an object he desires, or whether he becomes so spastic and tight that he defeats his own purpose. These observations will help the examining physician in making his diagnosis and in prescribing treatment.

After a patient has been examined and the diagnosis made, a mental test must be made before the doctor can make a decision regarding the child's future care. Unfortunately, so far no test has been devised by which the intelligence of a child with cerebral palsy can be measured accurately. For this reason, many times children have been given incorrect intelligence quotients and have suffered because of it. Undoubtedly tests set up for physically normal children leave much to be desired in the mental examination of a child who is handicapped physically in so many ways. His mind may be as good as that of the child in the age-group for which the test was intended—or even better—but he has not had the opportunities offered by attendance at school or by mingling with other children. Then, too, his physical condition may inhibit many of the responses he wishes to make. The orthopedic nurse should be most careful when she helps parents interpret the findings of the test. She is in a position to explain the need for further time and treatment before another test can be tried and to influence parents to continue with the treatment although it may seem useless at the time.

If the orthopedist, neurologist, and

psychiatrist decide that the prognosis is poor and that training will be of no value, the nurse still has a definite role in helping the family. If she has made herself a trusted visitor the parents will turn to her for suggestions regarding the care of the child. If they are unable to give the patient care in the home she can help them to find an institution for placement. Should the family wish to care for the child at home the nurse can give definite advice regarding physical care and help them to view their problem in the proper perspective. In some cities it is possible to secure a housekeeper for the mother in the low-income group. This service relieves her of some of the double burden of the child and the home.

This child should not because of his handicap become the chief interest of the mother nor on the other hand should he be shunted to one side because of other children in the family. If the parents are able, they should share their love and attention equally with him and other members of the family. Many parents allow themselves to be guided by their emotions rather than good judgment during the child's early years and later find their lives completely influenced by the demands of the child. Other children in the family can learn from the attitude of the parents to accept an abnormal home condition without a feeling of shame or dismay. The patient also will benefit far more if he has not been pampered to such an extent that he completely dominates the household.

THE CHILD WITH A GOOD PROGNOSIS

If the decision of the examiner is that treatment and training are indicated, the orthopedic nurse can be of still greater assistance to the family. If institutional placement has been advised, she may be able to refer the family to a training center which will be within their financial circumstances. If the treatment is to be given at a clinic she can arrange for transportation. If neither of these plans can be carried out, the doctor may order training at home by the orthopedic nurse.

The orthopedic public health nurse who gives home treatment to children suffering from cerebral palsy should have had suitable training for this type of work. It is not enough that she have a knowledge of anatomy, massage, and muscle training, although these subjects are of great importance. She must know as much as possible regarding the causes of this condition. She must have a clear understanding of what may happen to the spastic child physically, mentally, and emotionally when he attempts to perform a movement. She should have knowledge of the methods of relaxation and know how to apply them. She must be possessed of great patience and a sincere desire for the success of the patient himself. She must be able to encourage the child and family and help them maintain their interest in work which can easily become tiresome.

When home treatment has been ordered for a patient, there should be a conference between the examining physician and the nurse who is to treat the patient. After the patient has been studied and the doctor has decided under which classification of cerebral palsy the child is placed, he can outline what he hopes to accomplish and order specific treatment. Different methods of treatment have been devised for the spastic and for the athetoid child—the two types most generally treated—so this classification is of great importance.

THE ATHETOID

The athetoid has no disturbance in the actual muscle contraction itself; so muscle training is of no avail. His trouble lies in the involuntary motion going on continuously. He must be taught relaxation, and then movement beginning from the state of relaxation. This is a very difficult task. Various methods may be used. Some children

can be taught through the use of word pictures. For instance, an imaginative child may be taught to think of his body as being made of the softest thing he can think of—cotton, falling snow, jelly, or feathers. Another may imagine himself as floating in the air, for which purpose he would have to be very soft and light. Rhymes and little songs may be used to help the child relax; later, these become associated with relaxation in the child's mind. Music may be of some assistance. These training periods start with a few moments and increase in length. They progress from relaxation lying down to relaxation in a sitting position and demand more skill as the child becomes more capable of maintaining his relaxation.

THE SPASTIC CHILD

The spastic child's difficulty lies in actual disturbance in the muscle contracture due to the hyperirritability of the muscles. Because of this, certain muscles or groups of muscles contract under the slightest stimulus. This stimulus may be the beginning of movement by the opponents of the spastic group; or thought itself may be sufficient stimulus. When this frequent contracture happens over a long period the opposing group of muscles may lose their power and a double problem confronts the worker—that of strengthening the weakened muscles and teaching the spastic muscles to work without spasticity.

A big part of the problem in the treatment of spastic children is the presence of fear. A wise nurse first gains the confidence of her patient and works toward the eradication of fear and the establishment of a feeling of security and confidence. Only when this goal has been attained can relaxation be taught. While relaxation is of less importance here than in treatment of the athetoid, the spastic child must learn to relax also. From this point the nurse teaches movements with variations to suit the individual patient.

When treatment is begun in the home, certain conditions should be observed. Previous to the hour set aside for treatment—which should be the same every day—there should be no excitement or boisterous play. The room itself should be of comfortable temperature, and quiet, with the shades drawn. It is well for the mother to observe the treatment from the beginning if she can do so without excitement on the part of the child. The nurse must give to the patient a sense of quiet control, friendliness, and confidence. All treatment must be given with a definite objective and according to plans that have been previously laid out. Haphazard muscle training will be of no benefit to the child. Routine and schedule are of great importance in training the spastic child.

The parents should assume responsibility early in the treatment. In the beginning, it is enough that they understand the purpose of the nurse's treatment and prepare the child for the visit. This preparation is made by a quiet time before the hour set for treatment, as described above. Parents who coöperate in this small way can later be given a definite part in the treatment procedure. It is extremely important that they do learn to accept full responsibility since it may be necessary to carry on such treatment over a number of years. A goal should be set for the nurse, patient, and family.

RECREATION

If the patient is the only child, the parents should make every attempt to see that he has the companionship of children his own age. The mother should be encouraged to have other children come to the house and to widen the child's interests so that he can compete as far as possible with his friends. If he is able to attend school, he will have some contact with other children, but care should be taken that he does not become engrossed in himself only. In some communities, local groups such

as the Boy Scouts and Girl Scouts encourage membership of the handicapped child, either for the regular meetings or for home groups.

Normal activities should be encouraged and every attempt made to have the child lead a normal life as nearly as possible. Of course he cannot enter competitive games and strenuous exercises, but he should be taught early that there are compensations for the denial of these things. It must always be remembered that every child is endowed with an individual personality which must be preserved.

Education if indicated should be started as early as possible. The nurse is in a position to know the educational possibilities for a home-bound child or for one who cannot travel alone. She can direct the parents towards these advantages. For the preschool child, suitable educational toys offer a good outlet for energy. Some muscle training can also be given with similar toys, and this helps to relieve the monotony of exercises.

MOTHERS' CLUBS

In some sections of the country, an opportunity for group teaching may offer itself in the form of mothers' clubs. Most mothers and fathers who can spare the time are anxious to meet other parents to discuss the problems that arise in connection with these children and hear the solutions they have found. The orthopedic nurse can arrange and guide clubs of this kind so that the participants can help each other. Such meetings may also offer an opportunity for organized play groups for the children themselves. Local groups can be interested in the possibility of such plans by providing space, refreshments, and perhaps some sort of entertainment and play equipment.

While few orthopedic public health nurses have training in vocational guidance or occupational therapy, they should be equipped with a general knowledge of the importance and benefits of these two services. They know also the progress which the child is making in physical training and education and they have an opportunity to judge regarding the things the child likes to do and can do with ease. These points of information are of assistance when the patient needs either vocational guidance or occupational therapy training.

The nurse has a four-point objective when she finds a child afflicted with cerebral palsy: (1) early orthopedic and neurological supervision (2) mental testing (3) physical treatment (4) education. General health supervision of the child and his family are of course included in the duties of the orthopedic public health nurse.

There has been no attempt made in this article to describe fully the technique of the treatment of the child afflicted with cerebral palsy. Every child must be treated individually, in accordance with the general plan of care that has been described here.

NOTE: An article on "Cerebral Palsy," by Dr. Winthrop Morgan Phelps appeared in the January issue.

Problems in the First-Aid Treatment of Fractures

By EDWARD C. HOLMBLAD, M.D.

Although this discussion of the principles and methods in first-aid treatment of fractures is written for the industrial nurse it is of practical value to every nurse

THERE ARE a few fundamental principles in the first-aid treatment of fractures that apply to practically all cases:

The injured parts should be supported and no effort made to use them until there is assurance that no dangerous or serious fracture is present.

The injured part should be rested, and hasty pulling or jerking avoided.

Medical care should be called for promptly. Let the doctor responsible for the case know about it at once; if it is not practical for him to come to the site of the accident immediately, secure his instructions over the telephone about the first-aid care of the patient. If the case is ambulatory, telephone the doctor so that he will be available as soon as the patient arrives at his office or at the hospital.

Shock should be treated by keeping the patient warm. Chilling and unnecessary exposure should be avoided. Many patients when injured break out in a cold sweat which is really part of the condition of shock. The underclothing and even outer clothes may be wringing wet with this perspiration. The application of warm blankets and overcoats and the avoidance of direct drafts from sources such as wind, ventilating currents, or electric fans are indicated.

Pain and restlessness justify the administration of sedatives such as morphine or codeine in all severe cases. Get instructions from the attending physician and do not hesitate to seek his consent to give such a sedative by hypodermic if instructions have not already been given for such emergencies. The administration of medicine by mouth to relieve pain in these cases is not advisable because (1) it takes too long to act, (2) the process of assimilation of the medicine from the stomach is slowed up and almost stopped while the patient is in shock, (3) it may interfere with subsequent treatment of the patient's fracture under a general anaesthetic or it may interfere with shock treatment.

COMFORTABLE TRANSPORTATION

Transportation of fractures by the most comfortable method possible should always be arranged. It is much more vital to the patient's welfare that he be transported comfortably than hastily.

An experience of my own once taught me the truth of this statement. A fractured collar-bone on the football field resulted in my being hurried off into a waiting automobile. In those days graveled roads with good-sized stones were common and I shall never forget the pain I experienced as the ends of a fractured bone grated past one another almost continuously while my frantic but sincere driver speeded the three miles to the doctor's office. I felt as if every stone and every small bump we passed over registered its stinging pain.

Compound fractures—those in which the skin has been perforated by the bone

or lacerated or crushed in the accident—should not be manipulated. A dry sterile dressing or a sterile dressing moistened with some antiseptic solution such as mercurochrome, metaphen, mercresin, or merthiolate may be applied. Adequate sterile padding to absorb the oozing blood should be applied over the dressing. Bleeding should be controlled by tourniquet only in severe bleeding cases. Tourniquet pressure adequate to control arterial bleeding is very painful.

Following are a few pointers in the treatment of specific fractures:

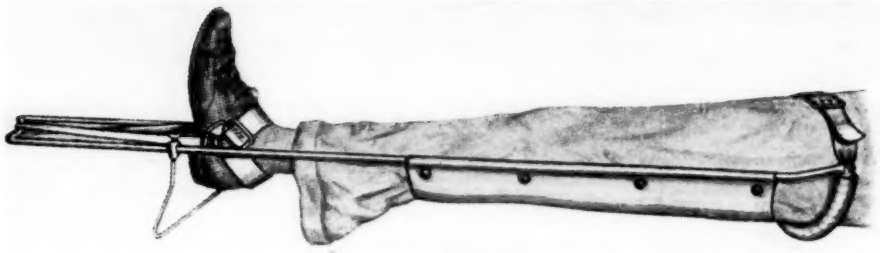
In fractures of the skull where the patient is unconscious, see that the air passages are not obstructed by the tongue falling back into the mouth. Remove false teeth. See that the head is turned to the side so as to avoid the aspiration of blood running back into the pharynx from laceration in the mouth or from the nosebleeds which so frequently accompany serious skull fractures. In those skull fractures where the patient is not unconscious, he may become unconscious at any moment; therefore, he should not be allowed to walk about or climb stairs without adequate support or assistance. Be prepared for the vomiting which frequently occurs in skull fractures and avoid letting the patient aspirate any of the vomited material.

Fractures of the cervical, dorsal, and lumbar spine, fractures of the pelvis, and extensive rib fractures must be moved cautiously. Do not try to raise such patients into sitting positions. They should not be lifted by the arms or legs. In such cases a stretcher may be placed under the patient by gently rolling him on one side and then gently allowing him to roll back onto the stretcher. Another satisfactory method of moving such cases is by the multiple-carry method, thus avoiding bending of the patient. With this method, three or four persons kneel close together on the same side of the patient. Working as a team in unison, and using their arms for support under the injured person, they rise from their knees into a standing position. The patient can thus be moved with a minimum of disturbance. In cases of a fractured or dislocated cervical spine the head should be adequately and gently supported during all movements of the patient. There is a short stretcher manufactured on which such patients can be moved into trains, down narrow or tortuous stairways, or up narrow shafts from tunnels or mines.

Fractures of the collar-bone or shoulder-blade, and fractures of the humerus at or near to the shoulder joint are best supported by placing the hand of the uninjured or good arm under the elbow of the injured arm, allowing the forearm to rest on the good arm. Slings may be used for support and they should always be adjusted so as to make the patient more comfortable with them than without them. Some of the first-aid books on fractures and dislocations show the methods of reduction of dislocated shoulders and elbows. I would advise against these efforts to reduce dislocations unless it is absolutely necessary because of distance or isolation. Many dislocated shoulders and elbows are complicated by fractures, and the danger of damaging nerves and blood vessels in these cases is very great. X-rays should be made whenever reasonably possible before reduction is attempted, and then it should be done by the responsible surgeon.

FRACTURES OF LONG BONES

The next group of fractures are those of the long bones of the extremities. These include fractures of the femur, tibia, fibula, and humerus. (Fractures of the radius and ulna are omitted here, since they are given better first-aid treatment without traction.) For these four fractures there is an excellent first-aid rule: Splint them where they lie. This



Courtesy of Zimmer Manufacturing Company, Warsaw, Indiana

Thomas leg splint with sling

means that traction should be applied to the leg fractures by means of the Thomas full ring or the Keller-Blake hinged half ring, and to the arm fractures by the Thomas-Jones splint. The details of application of this traction halter and splint may vary somewhat, but all methods accomplish the same result: that is, putting the fractured extremity at rest with traction, or pull on the extremity beyond the point of fracture. This is the most comfortable position for transportation and is a method that reduces to a minimum the danger of additional damage. Such splints permit easy lifting of the patient, and the splints may be suspended from the top of an ambulance, car, or truck by means of ropes and hooks; or the ends rested on some stationary or fixed object in the car.

The traction method of splinting these fractures where they lie was found most effective during the World War and has become a recognized procedure since that time. These splints are standard equipment in the ambulances of nearly all large cities, and railroads have them available at frequent interval stops.

BLANKET AND PILLOW SPLINTS

There are some other types of splints which may be applied to advantage in other fractures. Take for instance fractures about the ankle and fractures about the elbow. In these the pillow splint and the blanket splint have been used. Board splints may be added where necessary to give rigidity and adequate stiffness to the splint. In the blanket splint a blanket is folded so as to be about three feet wide by five or six feet long. A broomstick, cane, rod, or other stick is placed at each end and then is rolled towards the center from each end, leaving a trough in which the extremity is placed. The splint is held together by individual circular bands of muslin or gauze bandage about two inches wide placed at intervals of from four to six inches. These are then pulled as tight as is comfortable to the patient.

In the use of the pillow splint, a pillow that is quite soft and pliable and not too thick is placed under the affected leg, ankle, elbow, or forearm. Circular bands of muslin or gauze are placed at intervals of from four to six inches and pulled up as taut as the patient's comfort permits. A double or triple surgeon's knot gives the advantage of a gradual tightening and may be loosened gradually and easily. It has been found advantageous to pin the corners of the pillow around the ankle, thus immobilizing the foot and ankle.

In fractures about the elbow, forearm, and wrist, the arm may be supported on a pillow or pillow splint and the good arm and forearm used for support. This is usually all that is needed. All too often excessive wood splints such as boards or strips of metal are used on these forearm and wrist fractures. When the splints become too heavy or the

boards are applied in such a fashion as to increase the patient's pain, the very purpose of all first-aid treatment has been defeated. A first-aid splint or appliance in which the patient is more uncomfortable than he was before it was put on is worse than no splint at all. He is better off without it. In many fractures the bones are not out of place; and subsequent ordinary movements are not going to displace those fragments if the violence of the original injury did not displace them. All one needs in these cases is support to relieve the bone of its weight-bearing or supportive function.

Fractures of the ribs are readily supported by placing the flexed arm and elbow against the affected side and using the opposite arm to lend support, rigidity, and fixation. This procedure aids the patient greatly when he coughs or sneezes and also if he rides in an automobile, truck, or other vehicle to the doctor's office.

Fractures of the bones of the hands or feet rarely need first-aid splinting. In most of these cases adequate sheet-wadding or a combination pad with bandages gives all the splintage necessary until the physician has had an opportunity to outline the treatment. Some finger and hand fractures are best treated by traction; others by being flexed over circular drums or bandages.

FRACTURES ARE OFTEN OVERLOOKED

Quite frequently in industrial practice and even more often in private practice we see fractures that have been completely overlooked. There are several reasons for this occurrence. The following example is an illustration:

> About two months ago a patient was operating a sealing machine used in sealing packages. In the course of his work his middle finger was caught in the machine. There was no bleeding, although it was quite painful. The patient admitted that he sat down for a while, held his finger, and became a little weak. He was comparatively new on this job and his desire to make good and keep his employment urged him to keep on working, which he did to the regular quitting time that night. He failed to make out a report of the injury that night, since he believed it would be held against him. He even thought it might jeopardize his job. The following morning, because of the pain and swelling, he did report his injury to his foreman, who referred him to the first-aid department of the plant. As this was a small plant the first-aid man was one of the office employees. He made out the report, applied some iodine and bandages, and told the young man to resume work—which he did. This finger was redressed and new bandages applied each morning for two succeeding weeks. The boy was anxious to keep at work; the first-aid man was anxious to show a good record and wanted to keep down his reportable injuries to a minimum. It was two weeks and two days before it was deemed advisable to send this boy to a physician because of enlargement of his finger and persistent pain. The x-ray revealed a fracture of the middle phalanx extending into the joint between the middle and proximal phalanges. Immobilization gave the desired relief from pain, but the resulting enlargement of the finger might have been smaller had it been immobilized from the start.

Of course, this happened to a first-aid man and not to an industrial nurse; but it might have been an industrial nurse. In fact, it might have been a physician.

"SEE, I CAN MOVE IT"

Laymen have a misunderstanding about fractures. Almost every week someone comes into the office with an injured finger, wrist, or foot, saying: "See, I can move it; it isn't broken." This is an erroneous statement because many fractures of bones about the hands, wrists, feet, ankles, and even elbows and knees do not prevent movement of the extremity or injured part. Fractures of the scaphoid bone in the wrist are frequently overlooked and called sprains of the wrist until their failure to heal prompts adequate x-ray study. We hear every now and then of someone who has been thrown from a horse or has fallen from a step-ladder who comes walking into a physician's office a few days or a week later with a compression fracture of one of the ver-

tebrae in his spine. Sometimes the embarrassment caused by an injury such as falling down on a dance floor or falling while skating on ice results in a temporary heroic attitude of the injured person. He gets up, walks about readily, minimizes his injuries, and becomes as inconspicuous as possible. We all must be on our guard not to be fooled by this apparent heroism of the injured.

There is another group of cases which are worthy of special consideration. These are the head injuries—such as falls, striking of the head, the snap-back type of injury to the head, direct blows from falling objects, and blows by a baseball or driven golf balls. These patients quite frequently may be fully conscious and may manifest none of the usual symptoms of skull fracture. They should be given an adequate period of observation, and a careful history of the exact mechanics of the injury should be recorded so that the attending surgeon can decide whether x-rays are necessary.

Sprained ankles are another type of injury that needs careful observation so as not to overlook a possible fracture. Many patients with fractures of the internal or external malleoli about the ankle walk without much difficulty and it is always wise to rule out fractures by x-rays of these injuries early. It is false economy to try to save x-ray expense in these cases of potential fractures.

Injured swollen fingers or wrists may involve fractures that delay the recovery. Another problem that the industrial nurse will have to contend with is the problem of verifying some of the injuries. A patient may come in giving a history of a trivial wrist injury, and the physical findings such as pain, swelling, and tenderness may not be consistent with the history. Some of these cases may have occurred in other ways than the patient reports. Injured wrists and ankles in the summer may be due to noncompensible injuries such as baseball or football. In winter such injuries may occur from falls on icy sidewalks or cross-walks. Wherever there are findings that are in excess of the injury expected from the history, it is well to be on the alert for the possibility of a fracture which is the result of some hidden or suppressed accident.

TEACHING MATERIALS

In planning safety meetings and programs as well as in the teaching of first-aid classes the nurse will want to know about the available material for the teaching of first-aid treatment of fractures. Some of the worth-while text books are:

Amerian Red Cross. First Aid Text-Book. P. Blakiston's Son and Company, Philadelphia, Revised edition, 1937. Chapter VIII, pages 131-175.

Eldridge L. Eliason. First Aid in Emergencies. J. B. Lippincott Company, Philadelphia. Ninth edition revised, 1938. Chapter VI, pages 105-137.

In addition there are many others on the market.

Moving pictures which are excellent demonstrations of first-aid treatment such as the application of traction splints to legs and arms can be obtained in 16 millimeter size. Some of these are:

Emergency Care for Safe Transportation in Fractures of the Long Bones. Fracture Clinic, Massachusetts General Hospital, Boston, Massachusetts.

Transportation of Fractures of the Extremities. Hubley R. Owen, M.D., Chief Surgeon, Department of Public Safety, Broad and Spruce Streets, Philadelphia, Pennsylvania.

First Aid Treatment in Fractures of the Lower Extremity. Kellogg Speed, M.D., 122 South Michigan Avenue, Chicago, Illinois.

A physician from the medical department or consulting staff can be asked to give a discussion of this subject before the first-aid classes.

In summary, the general principles of first-aid treatment of fractures are: Support the fractured parts; avoid hasty pulling or jerking; get medical care

promptly; combat shock; give sedatives for pain and restlessness; apply suitable splints; and arrange for the comfortable transportation of the injured person. Further, caution should be taken in regard to the possibility of overlooking the potential fracture case—some of which occur as skull fractures, spine fractures, and wrist, hand, and ankle fractures which are thought to be only bruises or sprains.

Presented before the industrial nursing session, National Safety Congress, Chicago, Illinois, October 13, 1938.

April May-Day

By EDITH S. COUNTRYMAN, R.N.

Has the transformation of May Day into Child Health Day been a success? What are our aims for May Day?

OF COURSE, May Day comes May the first. Anyone would be foolish to argue that it doesn't. But in Iowa, May Day in 1932 was celebrated on April 14 and 15, and the child health program that year proved to be more successful than any program before or afterward.

The established date for Child Health Day was violated to make possible a meeting which also disobeyed tradition. Instead of striving to develop a community child health project that year, Iowa held a meeting which was attended by more than 700 persons from all corners of the state. When they left Des Moines, where the meeting convened, these people had a real idea of what could be done for child health in Iowa. All of them—physicians, nurses, public health officers, school superintendents, and other interested laymen—took something definite home with them. They knew what had been accomplished for child health in Iowa during the preceding year; they had a picture of what their own communities could do to further child health in coming years; and above all, they had actually *participated* in the May Day health program.

Both prior to and since the 1932 meeting, Iowa's experience has shown that the attitude "Let George do it" is generally applied to the realization of the child health objective of May Day. Parents and organizations give lip service to Child Health Day but usually little more. Not many participate in the suggested program. With a few exceptions, requests to take an inventory of community child health protection are disregarded. Thousands of bulletins sent out each year may have been read—or at least given a glance—but tangible results growing out of suggestions in these publications have been negligible. Of 4000 survey forms distributed in 1938, 14 were filled out and returned—a percentage hardly encouraging.

TRADITIONS OVERSHADOW HEALTH

However, the lighter side of May Day—the parade and the winding of the Maypole—invariably creates intense interest and active support. A typical May Day means hours of work in making Susie's new white dress; hectic, repeated explanations to Billy on how he is to act when the time comes; and days of planning for the parade and the playground exercises. In the excitement,

"child health" is audible, but only as an echo of the other activities.

Undertones about health are heard. "Wouldn't it be terrible if Polly should get sick and couldn't march May Day?" "I hope Jack's cold is better so he can be with the children May Day. I simply won't let him go if he feels the way he does now."

And then, in spite of such pessimism and worrisome disorders, May Day arrives. Jamie and Mary Lou strut down the street representing a "Carrot, Good for Nutritional Advantages" or a "Big Molar Tooth, Important for Chewing." The children are "cute" and parents proud.

They have a right to be. For this is May Day, the celebration which has been a custom in all countries since the beginning of the Christian era. It is the children's day and it came first; Child Health Day was second. Failure to recognize this fact accounts to a large degree for the apathy toward Child Health Day, and, in the case of Iowa, toward the entire week following May Day set aside for study of child health problems.

A choice is offered as to how efforts shall be expended. On the one hand is May Day; on the other hand, Child Health Day. Because it is colorful, spectacular, and traditional, the first is accepted. Perhaps child health workers are making a mistake in trying to compete with May Day and the tradition which encircles it. The success of the 1932 April May-Day meeting in Iowa is a case in point. Preceding May Day, it succeeded far better than the usual bulletins, inventories, and surveys to further child health protection.

The proceedings of the conference filled a volume of almost 500 pages. The meeting was in four sections—medical service, public health service and administration, education and training, and care of the handicapped. The sessions included studies and discussions of maternal and neonatal mortality in Iowa, the infant and preschool child, state health organizations, rural health organizations, the place of child health work in the official health program, the incidence of and deaths from children's diseases, and other subjects related to child health. Representatives of the American Child Health Association, the University of Iowa, the United States Public Health Service, the State Department of Health, the medical, dental, and nursing professions, and lay organizations spoke at the meeting. Various nonofficial groups made financial contributions which assured the success of the program. Persons attending paid a small registration fee.

The important aspect of the conference is that it proved that some 700 influential civic leaders were sufficiently concerned with child health problems to give two days of their time and to pay the expenses of a trip to Des Moines to attend the meeting. The response to the typical May Day programs never approached this figure.

COMMUNITY LEADERSHIP NECESSARY

Leadership and planning accounted for the success of this meeting; and lack of them is an important reason for the relative failures of other Child Health Days. In most cases, local leadership in Child Health Day devolves upon the public health nurse, if there is one in the community. The lay organizations, which are counted upon to supply the manpower for Child Health Day, leave the promotion of health objectives and suggestions for the May Day bulletin to the nurse. Busy with the routine duties of her work, the nurse does not have the time to spend in proper organization of a Child Health Day. Furthermore, she cannot promote the program alone. While the parents and members of the various organizations which receive May Day bulletins are in sympathy with the purposes of Child Health

Day, they are not inclined to divide their time between this program and May Day. They seem reluctant as groups, as entire communities, to sponsor Child Health Day.

But those whose voices are the strongest—because as a rule they have made a personal effort to investigate child health problems—are willing to coöperate with health leaders, not for one day alone, but for this year, the next, and the following, in studying and improving child health. The bulletins, characteristic of May Day efforts, fall far short of achieving this goal which is reasserted annually. A common fault of these bulletins is that they go to nearly all groups with the hope that one or more will follow the suggestions in them. Assuming that all the organizations in a community receiving copies of such bulletins were to act upon these suggestions, what would happen? There would be bedlam. The medical society, the health officers, and the public health nurse—as sources for the required information—would be driven to the brink of madness answering over and over again the same set of questions. The chief result would be confusion for all concerned.

However, by securing the united action of all interested organizations and centering a year-round child health program around the efforts of the physicians and the public health workers, success might be attained. The ideas expressed in Child Health Day bulletins might then be more than bold-face type in an expensive publication or fancy mimeograph marks in the cheaper variety; they might take shape in reality.

YEAR-ROUND PROGRAM IS THE AIM

In this type of program, leadership would of course have to be developed. An annual meeting similar to the Iowa April May-Day conference could well accomplish this. In order to maintain the spirit of Child Health Day, such a conference would meet near the first of May. The May Day bulletins could be used to publicize this meeting. Employed for this purpose, they would help to make child health protection a well-rounded community activity for all time and not merely a half-hearted gesture for just a day. The main theme of the meeting could be that of organizing year-round child health programs for the various communities.

Years might pass before truly productive activity would be forthcoming. During this time, however, the group of interested persons in the community would be growing stronger. Others would follow their lead, and child health might take the place in community interest that it deserves. Community meetings, modeled after the annual state meeting and discussing the same problems, might be held to supplement the state conference and to apply its findings and suggestions to the local situation. With a nucleus of informed persons to build a program and with the importance of unity emphasized, community action in child health protection from the first day of May to the last day of April is possible.

NOTES *from the* NATIONAL ORGANIZATION FOR PUBLIC HEALTH NURSING

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Gertrude Weld Peabody

GERTRUDE WELD PEABODY, who was a member of the Board of Directors of the N.O.P.H.N. from 1922 to 1934, died on December 3, 1938. Miss Peabody became a member of the board of directors of the Community Health Association in Boston, Massachusetts, in 1902. She served as secretary of the board from 1907 to 1912 and as vice-president from 1912 till her death. She was president of the Massachusetts Committee of Directors of Visiting Nurse Associations for eleven years and was the first president of the Massachusetts Organization for Public Health Nursing, which succeeded the Committee.

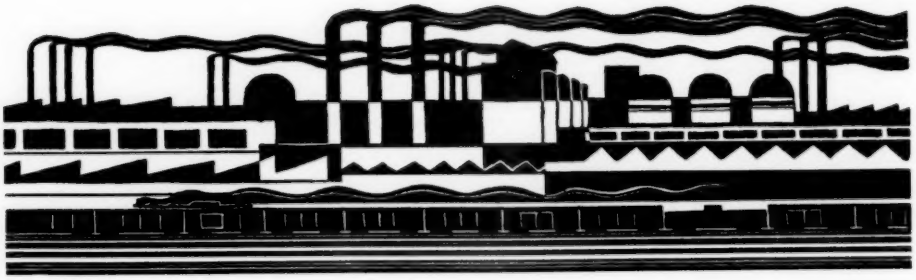
Miss Peabody's great contribution to public health nursing is expressed in the resolution of the Boston Community Health Association which is quoted here in part:

> In our meetings her experience and judgment were always valuable. Her presence on the board always lent a sense of stability. We felt confidence in taking any action when it met with her approval.
>
> But she did more than have an important influence in developing and maintaining our technical work. She helped to inspire with a human touch which gave it a significance beyond its technical usefulness, as an expression of the goodwill of the individual members of the community.
>
> She accomplished all this in spite of an innate modesty, largely because of her simple, unselfish character, her loyalty, and her constant willingness to do more than her share.

WE THANK YOU

Christmas cards! Christmas cards from abroad, from Alaska, from the hot, sunny countries and the snowy slopes of the mountain states—cards from board members, health officers, supervisors, staff nurses, and students in courses! The N.O.P.H.N. has never had so many cards. There were elaborate ones, whimsical ones, dignified ones, and informal ones colored with crayons. There was even a charming foot-high Santa Claus with a bag of candy over his back! So many and so lovely they are, we can never thank all of you properly. It is at such times that the N.O.P.H.N. membership really seems like a big happy family.

Thank you, and a happy New Year.



MEETING OF CHICAGO INDUSTRIAL NURSES

THE GUEST SPEAKER at a meeting of the Chicago Industrial Nurses' Association on November 10, 1938, was Alma C. Haupt, director of the Nursing Bureau, Welfare Division, Metropolitan Life Insurance Company. The meeting was held at the headquarters of the First District of the Illinois State Nurses' Association, and was attended by two hundred nurses from different branches of public health nursing.

An address of welcome was given by Gertrude F. Jaeger, president of the Association, and the speaker was presented by Christian F. Seabrook, group nursing supervisor, Chicago Office, Metropolitan Life Insurance Company.

Miss Haupt in her inimitable manner brought out some very significant points regarding the development, trends, and possibilities in industrial nursing, and its relation to other phases of public health nursing. Her remarks are summarized as follows:

1. Public health nursing includes all services organized by a community or an agency to assist in carrying out any or all phases of the health program.

2. Public health nursing is directed toward the family as a unit, and all individual health problems are viewed in their relation to the family group.

3. The health of the wage-earner is one of the most important factors in a family health service. The nurse who understands and assists in a program for the promotion of the health of the industrial worker occupies an important position in the public health field.

4. The modern trend is for the employer to be interested in the health of the employee. To keep the employee well and on the job means uninterrupted and better service.

5. Today, industrial nurses are making history. Their services are recognized as essential in industrial plants.

6. It is important that industrial nurses be community-minded. All nurses, in whatever field they are engaged, should be encouraged to see the health problems from the standpoint of the community. "Walls can block the nurse's vision."

7. Modern industrial hygiene is organized for the promotion of health and the prevention of disease. The methods of approach are, however, quite varied. The nurse in industry must be well qualified, for her position affords her a splendid opportunity to familiarize herself with the problems of family and community life through her contacts with the worker.

8. It is desirable that all public health nurses have special preparation for the field in which they expect to work. The preparation of the industrial nurse should enable her to make the maximum contribution to the health of the industrial worker. She needs a sound general nursing background, special courses in public health nursing, and personal qualities of a high order. She must like people and be interested in their welfare. She should keep up to date on public health nursing activities, attend conferences and meetings, and continue to take courses in order that she may maintain a broad vision. Public health nurses are educators of a high order and it is of vital importance that they see the community as a whole.

GERTRUDE F. JAEGER, R.N.
Swift and Company, Chicago, Illinois

INDUSTRIAL MEDICINE IN A BANK

THE Continental Illinois National Bank and Trust Company of Chicago, with a personnel of some three thousand employees, has a medical staff of one part-time physician and two full-time nurses. One nurse spends a part of each day visiting employees who are home because of illness.

The most important function of the medical division is to help maintain the health of the working force and thereby reduce absenteeism caused by illness. Since no known occupational disease has developed in bank work and since employees rarely have accidents of a serious nature while at work, consultation and advice on the prevention of illness from nonoccupational causes comprise a large portion of the work of the division. Thus the program for the prevention of the common cold, which is the ailment most frequently treated, consists of oral vaccine, vitamin therapy, adequate rest, and suitable exercise. It is believed that this program has reduced the amount of absence from colds.

Employees who have acute or chronic ailments are referred to their own physicians for treatment. Accident cases, although infrequent, are covered by workmen's compensation and are referred to the insurance company doctor after first-aid treatment has been administered. An average of eighteen hundred persons receive medical attention each month. This includes a physical examination for each new employee and a scheduled rechecking of employees who show pathological conditions.

B. SCHWIRTZ, R.N.
Continental Illinois National Bank and Trust Company of Chicago, Illinois

ALL-ROUND HEALTH PROMOTION

THE Chicago Bakeries of the National Biscuit Company have their own capable health service, which not only takes care of accident cases but gives advice and treatment for conditions due to any cause. All employees are examined at least once a year to check the general trend of their health and to initiate early preventive or curative treatment. However, we believe in supplementing our medical service with the many valuable services which the various Chicago health organizations offer to industry.

At the present time the Tuberculosis Institute of Chicago and Cook County is doing a fine piece of work in our plant. For the benefit of our employees, a physician gave a talk on the subject of tuberculosis and showed us a sound film which featured an interesting case study of this disease. Later a doctor and technician visited the bakery and made skin tests on all employees who desired it. This was followed by x-ray pictures of the chest, the equipment being brought into our medical department for the purpose. Since this work has not been completed, statistics are not yet available.

We also take advantage of the free Kahn blood tests offered by the Chicago Health Department. These tests are made on specimens of blood taken by our doctor in his routine examination of employees.

Another outside service is that of the dental society of Chicago. Technicians representing this society brought their x-ray equipment into the bakery and made complete films of the teeth of all employees. Where dental attention was required, the x-ray films were sent to a dentist designated by the employee.

We avail ourselves of the splendid

nursing service for ill employees offered by the Metropolitan Life Insurance Company, since our group insurance plan includes this feature.

Our aim is to avoid having the services of our medical department become a mechanical routine of physical examinations, dressings of injuries, and medical care. Instead, we try to utilize this daily routine as part of an all-round health promotion project which will insure maximum care in the bakery and proper regard for the health of our employees when they are not at work.

ANNA SMELTZER, R.N.
National Biscuit Company, Chicago, Illinois

PREVENTING INFECTION OF OPEN WOUNDS

THOSE WHO ARE familiar with insurance statistics know that infection plays a very important role in the necessity for prolongation of treatment, and in ultimate disability. When a working man is injured, probably the most important factor in his early return to usefulness will be the primary healing of his wound. If infection supervenes, primary healing cannot take place, and the expense of his care and size of his settlement will be increased. In addition, he may be handicapped in his effort to return to his regular work or in his attempts to secure other employment.

Because of these known facts it is the duty of those who work in any phase of industrial medicine to inculcate in the minds of working men a wholesome respect for all wounds, however trifling they may seem at the time of occurrence. All surgeons realize this. All industrial nurses should realize it, particularly because they in most cases see the patient first, and the ultimate outcome of his case may be in their hands.

The prime requisite in the healing of any wound is cleanliness, not only of the wound itself, but also of the surrounding tissues. What is the best method to use in obtaining surgical cleanliness? It has been demonstrated that the most efficient and satisfactory cleansing agent is a plain variety of white soap and warm water. Of course, in many instances the wound will appear in an area surrounded by oil or grease, and in these cases a solvent such as benzine or ether must be used to cleanse the surface.

A suitable cleansing method is as follows: (1) cover the wound itself with a piece of sterile gauze (2) clean the surrounding skin with a solvent, if necessary followed by soap and water (3) shave. In this way the skin can be made to compare with that of a patient prepared for operation in the hospital. This cleansing of the surface, if properly done, will consume about ten minutes.

Next the wound is uncovered, and cotton sponges held in either the gloved hand or by instrument are used to apply the soap and water to the depths of the wound. The cleansing is gently done, and it is important that the operator be sure that all particles of foreign material are removed. This operation is followed by an irrigation of the wound with warm sterile water or normal salt solution. Usually another ten minutes is required and probably no less than a quart of water or saline solution will be used. In this manner the wound is rendered as surgically clean as is possible, with a minimum amount of damage to the delicate tissues in the wound.

The use of antiseptics in the cleansing of wounds has been proved to be harmful because they cannot possibly kill all the bacteria which may be present, and they may so damage the defensive forces

present that these forces are unable to cope with the infectious material which may remain.

Following the cleansing procedure as outlined here, the wound is closed in the usual manner without drainage. If the affected part will be subjected to much movement, it is best that it be splinted, since healing takes place more rapidly when rest is accorded the injured area.

The industrial nurse should always have in mind (1) the possibility that the wound has damaged important deeper structures which may not be visible, such as the tendon sheaths or tendons in the hand and fingers (2) that tetanus antitoxin should be given in all cases where street or farm dirt is a contaminant (3) that the use of gas bacillus antitoxin should at least be considered in all crushing injuries (4) that the nurse, because she is the first to see most wounds, plays a most important part in the final result. Perhaps she is second in importance to the doctor in treatment, but in most cases she can render more service than the doctor in prophylaxsis.

JAMES K. STACK, M.D.
Consulting Surgeon,
Chicago and North Western Railway Co.,
Chicago, Illinois

NURSING SERVICE TO THE PLANT EXECUTIVE

SHOULD the industrial nurse give nursing service to the highly paid executives of the organization? This question was raised at the industrial nursing session of the National Safety Congress in Chicago, Illinois, October 13. (See December issue, pages 730-731.)

A speaker from the floor said that some industrial nurses are giving a great deal of time to plant executives and their families—who can well afford to pay for private nursing service—to the neglect of employees.

The question was discussed from the floor by Dr. C. O. Sappington, a specialist in the industrial health field, who has summarized his remarks for PUBLIC HEALTH NURSING. Another point of view on the subject by one of our regular readers who is in the industrial health field is also presented below.

INSTILLING CONFIDENCE BY EXAMPLE

It happens that I have had considerable experience on this matter, particularly in regard to the use of the plant physician and nurse by the manager. At one plant where I was located as the plant physician, it was the custom of the manager to encourage the use of the medical and nursing services, instilling confidence in the employees by direct methods. One of these direct methods was the frequent use of the medical and nursing personnel in their advisory capacity by the manager himself. It is true that the plant manager has sufficient money for a private physician and private nursing service, and against this I have nothing to say. I believe, however, that if the manager uses the plant medical and nursing personnel in an advisory capacity, and by his example makes every effort to increase the confidence of the employees in the health services, the employees will be convinced that the services are really adequate and useful.

C. O. SAPPINGTON, M.D., Dr.P.H.
Consulting Industrial Hygienist
Chicago, Illinois

THE HEALTH OF THE EXECUTIVE

MUCH OF the work of the industrial medical department has to do with the treatment of injuries. Therefore, nurses often come to think of themselves merely as first-aid attendants and fail to see opportunities for important service in the promotion of health.

Even where a good health program is being carried out, emphasis may be placed upon service to industrial workmen, to the neglect of that small but very important group, the executives. Industrial nurses are prone to think of the executives as not needing any help from the medical department. It is true of course that they can afford to pay for medical care. But often executives are more guilty of neglecting their health than are the industrial workers.

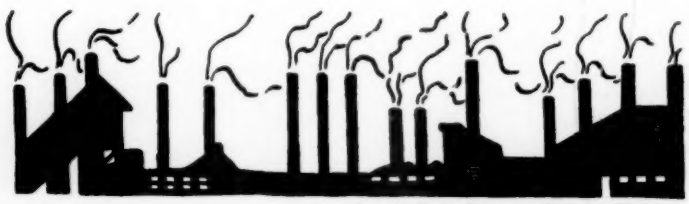
Many executives are quite uneducated in health matters. All of them are preoccupied with their jobs. Most of them are pretty well disciplined and do not complain easily. Those who have come up through the school of hard knocks share with some of the more stubborn members of the labor crew a "he-man" complex, which makes them feel that they are babying themselves if they observe some common-sense rules about rest and treatment.

Among this group the nurse has an opportunity to render a service which will pay her employer many times the cost of maintaining her department. The production of the whole organization is affected by the efficiency of the executive group, which in turn is largely determined by the health and vigor of the individual executive.

The nurse should keep informed about the health of the executives. She should see that their physical examinations are taken care of regularly. She should watch for colds, eyestrain, overfatigue, nervous tension, and a multitude of ailments more likely to occur in this group than among industrial workers. She should remember that some of the executives, although not as young as they used to be, are attempting to carry on with undiminished activity.

Executives are not always easy to handle in health matters. Different ones will require different methods. But they are all likely to respond if the nurse shows a sincere and understanding appreciation of the importance of their work and the value of their time. Once they become convinced that she knows her job they will place confidence in her and in the health department.

A READER



By Ruth C. Farmer, Detroit, Michigan

See page 106, "Problems in the First-Aid Treatment of Fractures," by Dr. Edward C. Holmblad and news note on page 131.

TRAINING TEACHERS FOR HEALTH INSPECTIONS

By ANNE P. COTTRELL, R.N.

A nurse describes the plan for preparing teachers to do health inspections of school children in the city of Detroit, Michigan

A PROGRAM of health inspections of school children by teachers was initiated in Detroit in 1921. This program has proved more effective than its originators dared to hope.

It is impossible—even if it were desirable—to have every school child examined each year by the school physicians. Aside from the prohibitive cost of such a procedure, the superficial type of examination that usually results from this mass program has little, if any, value. Furthermore, children and parents are not helped to secure a knowledge or an appreciation of the medical facilities of the community. Certainly children should not be taught to rely on the school medical staff for health advice because that staff will not be available to them when they leave their school years behind them.

The plan of selecting certain grades or certain groups for examination by the school physicians would of course reduce the number to be examined so that the cost might be met; but the other objections would still apply to this practice. There must, however, be some feasible solution to this problem. In trying to find an answer, the plan of teacher inspections was formulated, and with the coöperation of the principals of a small number of schools, was launched. The scope of this program has grown until at the present time all public schools and nearly all parochial schools participate in it. An interesting part of this development is that at no time has any pressure been brought to bear on principals or teachers to incorporate the inspection into their program. Their participation has been on a voluntary basis only.

Teacher inspection is not intended in any sense to replace or to be a substitute for the medical examination. All children are encouraged to visit their family physician for periodic health examinations, and reports of such examinations are being received from the physicians in increasing numbers. The findings from these reports are transferred to the child's school health record form. However, there are still thousands of school children who do not visit their own physicians for such examinations, and it is with this group that the teachers and school physicians are particularly concerned. The others have demonstrated that they are able to take care of their own needs. The teacher health inspection, often designated as a screening inspection, is made by the teacher for the purpose of selecting those children who have obvious physical de-

fects which can be readily discovered by persons without medical training. The teachers inspect for visual and auditory defects, for evidences of gross defects of skin, teeth, tonsils, palate, cervical glands, thyroid gland, and nose, and for symptoms of orthopedic defects.

Teachers do not examine for abnormalities of the heart. Studies have been made which show that children with heart disease usually have some other defect for which they would be referred to the physician. If the cardiac condition is serious, it is known usually to the parents and to the school. The fact that teachers cannot make cardiac examinations therefore does not constitute a very serious problem.

The teacher's judgment in relation to defects of the tonsils, cervical glands, and thyroid gland, is of course of little value in itself. However, it is our purpose that children shall be taught through experience to use the existing medical facilities of the community, and any recommendation made by the teachers that may lead to the accomplishment of that purpose is of value. The printed instructions supplied to teachers say: "It may be safely assumed that where a child presents an uncorrected physical defect that is manifest to the teacher, a family has been found that is in need of special service from the medical educational forces of the community."

CONTINUOUS OBSERVATION STRESSED

Emphasis is placed in instructions to the teachers on the significance of continuous observation of the child and on the child's health history as an indication of possible deviations from the normal. Again quoting from the printed instructions: "A cough persisting for over three weeks, constant loss of weight, or a history of tuberculosis in the child's family should be grounds for the teacher recommending" an examination. Every teacher in the elementary grades in both public and parochial schools is expected to make an inspection each morning of the children under her supervision, and to keep them under observation through the day, not only for signs and symptoms of communicable disease, but also as part of their health supervision. Behavior as related to possible physical defects is also stressed.

Of course neither teachers nor nurses diagnose conditions which they consider suspicious in the children. However, the joint histories and observations accumulated by three different persons make possible a more prompt and accurate final diagnosis of defects.

After these fact-finding inspections are completed, those children found to be in need of medical service are referred to the school physician, who makes of the child health examination a demonstration to the parent of the need for medical care. He also assists the parent in making a plan for securing medical attention in those cases where such assistance is needed.

USE OF FAMILY PHYSICIAN

The program which is being developed and which it is hoped will be put into practice for all school children will eventually in all probability replace the present program of school physicians.

At the beginning of each semester all new entrants to elementary and secondary schools are referred to their own physicians for complete health examinations, and each child is given a form on which the doctor is asked to record his findings. This report is then returned to the school, and children bringing such a report are not screened by the teachers or examined by the school doctor. In the schools where this procedure is working out quite satisfactorily, no school doctor is assigned.

It is hoped that this program will develop to the point where all school children will be given periodic health examinations by their own physicians. Until this Utopian state can be achieved,

the weight of the school doctor's examination is needed to demonstrate to the parents the need for medical care.

Any discussion of the teacher's participation in such a program as this immediately brings up the question of the teacher's qualifications for such inspections. Is it not expecting too much to ask untrained people to make physical examinations? If the fact is borne in mind that the teacher inspects for only the obvious and easily discernible defects, it will be evident that any intelligent person can qualify for this service with a little training and guidance.

HOW TEACHERS ARE PREPARED

During the early years of this program, as each principal requested that his school be included in the plan, a specially selected school physician met with the teachers in small groups and through discussion and demonstration supplied the necessary training. School children, previously selected by the school nurse as having typical defects, were used for teaching purposes. These children were carefully chosen and instructed for their part in such a way that their feelings were not hurt by the experience. The physician used the same children to demonstrate normal conditions; for instance, one child might have poor vision but a normal throat. No child was made to feel that only his defect was emphasized. It was usually obvious that the children felt honored to be chosen for the demonstration. After conducting the inspection the physician had the teachers themselves conduct their own inspection of this same group. Since that time it has been necessary to meet only the new teachers for such instruction.

As an additional aid in the training of teachers, each one has been supplied with a pamphlet of instructions—referred to above—on health inspections. This pamphlet not only includes instructions in the methods to be used, but it also contains information concerning normal and abnormal physical conditions. The following is quoted from the pamphlet: "Enlarged tonsils may or may not demand operative attention. It is wise, however, to have all such tonsils studied by the child's physician in order to pass on their significance. Inflamed or infected tonsils may be the cause of frequent sore throat. This condition may permit bacteria to gain access to the blood stream where they can cause damage to the heart, muscles, joints, et cetera." The pamphlet also includes the scale for grading each condition found and several sketches illustrating degrees of defects.

The school nurses offer continued guidance and assistance wherever and whenever it is indicated. They also give the initial instruction and demonstrations—individually and in small groups —to teachers who are new to the school system, upon the request of the director of school health service.

Because of the fact that many of the new teachers who come into the school system each year are graduates of Detroit's Wayne University, a plan has been put into practice by which all students enrolling in the College of Education of this university are given instruction in the teacher health inspection procedures. The director of school health service of the Department of Health lectures each year to these students and also gives demonstrations such as are given to the teachers in the schools. Thus many of the teachers are already prepared to carry on the health inspections effectively when they begin working under the Board of Education.

The success of the plan of teacher health inspections is self-evident to those of us, who, as school nurses, have the opportunity to observe and work with the teachers. The teachers have been trained to do a very satisfactory screening inspection. In a study of 28,551 children it was found that there was a disagreement of only 8.2 percent

between the teacher's findings and the doctor's.*

The teacher inspections are a factor in improving the health of the children, for through them the teachers become more actively interested in the health of their students and therefore more alert to their needs.

*Gudakunst, Don W. "School Health Inspection by Teachers." *The Milbank Memorial Fund Quarterly*, April 1937.

HEALTH INSPECTIONS AS VIEWED BY A TEACHER

By MARGARET W. TUOMEY

A teacher tells how the health inspections of children work out in actual practice from the point of view of the teacher

TWO TYPES of health inspections are made by teachers in the schools of Detroit—the yearly screening and the daily inspection.

Teachers are urged to conduct a physical inspection of the children early in the first semester of the year. This promotes a better relationship and understanding between pupils and teachers, and aids pupil progress.

It is customary to have someone of experience, either a physician or a nurse, demonstrate screening to the teachers before the inspection. In the Poe School—which is a training school cooperating with Wayne University, where about four hundred student teachers do directed teaching yearly—the state commissioner of public health was invited to demonstrate screening. When the supervisors, nurses, directing teachers, and student teachers assembled in the school auditorium, they were supplied with "Health Inspection of School Children," a pamphlet published by the Division of School Health Service of the Detroit Department of Health. The commissioner demonstrated how to inspect the children for the various defects described in the booklet. After the demonstration, ample time was given for questions. Everyone who witnessed the proceeding was impressed with his skill and the regard shown for the sensitivities of the children.

During this last year each group or class of children in the school has been assigned to one teacher, who was responsible for its health and attendance. The class assigned to each teacher was usually the one she met the first period on Monday morning. Because there is such a close relationship between health and attendance, the teacher conducted the screening of these children for physical defects. The results were recorded in pencil on the child's cumulative pupil record.

After the teachers completed the screening, preparation was made for the doctor's visit to the school, which was one morning a week. The examinations began with the children in the highest grade in school. The teacher of that grade prepared a list of the children who had been found to have defects according to the teachers' inspections. The list included the family name, the address, the children's first names, and the type and degree of defect as found by the teacher. Included also were the names of all the children in one family having defects, so that all might be examined at one time. This was done so that the parent would have to make only one visit to the school for the examination of his children.

After the teacher prepared the list of children having defects, invitations were sent to thirty parents of the children in one class, if that many needed attention; otherwise parents of two classes were invited to see the doctor. If these par-

ents did not report on the first invitation, a second or a third was sent. Because it was found that so few parents responded to the second or third invitation, it was decided to issue one invitation to each parent of a child having a physical defect before any second or third invitations were issued. Last year it was possible to give assistance to parents of children from the sixth grade to the third. About two hundred and twenty-five parents called at the school health room during the year to see the doctor.

CHILDREN HELP WITH EXAMINATIONS

After the invitations had been issued, preparation was made to receive the parents so that their visit would be pleasant and satisfactory. Four responsible children, two boys and two girls, were chosen from the upper grades to assist in the health room. The school has been especially fortunate in the type of children doing this work; they delight in the responsibility. The boys acted as ushers and guides for the parents and children. The ushers seated the parents in the order of arrival so that they were taken care of fairly. While the parents were waiting to see the doctor, the ushers gave them school newspapers to read, and interesting magazines containing articles on community, educational, and recreational activities, health, and child guidance. The parents read for a time, and then we noticed that many of them visited with each other about their children and their problems. This contact seemed to develop a better relationship between the school and the community. After the parents were comfortably seated, the ushers sent to the classes for the children of three families at a time, to be ready for the doctor.

Two girls assisted the doctor in the health room itself. One recorded the results of the doctor's findings in ink on the pupils' record. The other girl assisted in the testing and checked the family name on the list as the children reported. For this reason it was necessary to choose girls who were neat, responsible, and good in penmanship. The pupils' interest in this work also gave the teachers a clue to their vocational interests.

After the parents and children have seen the doctor there is the problem of the correction of defects. Some defects can be handled directly by the parent, doctor, and nurse without the aid of outside agencies. Last year, vision, hearing, and dental corrections were supervised by those in charge of school health.

The children with vision defects are directly under the supervision of the principal. Children with symptoms of vision defect are referred to the school nurse, who makes vision tests. She reports her findings to the principal, who interviews the child and frequently requests the parents to call. The attendance department investigates the economic status of the family if requested to do so. A special form is used for this purpose. Glasses are purchased for underprivileged children from the school social service fund, which is derived from a monthly contribution of the employees of the Detroit Board of Education. Fifteen children with a special vision problem which seemed to be a disability in reading were referred to the psychological clinic.

Children with hearing defects are also under the supervision of the principal. Due to a recent epidemic of scarlet fever there has been much work of this type to do. The nurse or doctor makes a test of the child's hearing. If special attention is necessary, the child is interviewed by the principal of the school and an appointment is made to have the parent take the child to the school for the deaf for a test and advice. There a decision is made as to whether he should be given treatment or placed in the school for the deaf.

The dental corrections for children in

the school are in charge of one of the health education teachers. After the screening is completed she requests each teacher to classify the children having defects into three groups: those who can afford dental care; those who are on relief; and those not on relief but who cannot afford care. These lists are kept by the teacher in charge. A dental card for care at a dental clinic is given to each child who needs it.

DAILY INSPECTION

In addition to the yearly screening of school children, the teachers make a daily inspection of children as they enter their classes the first period each morning. To prepare teachers for this inspection, a bulletin describing the procedure was given to each one at the first meeting before the opening of school in September. In this bulletin the teachers were advised to look for symptoms of deviation from the normal such as sore throats and skin eruptions and to report the findings on the proper form, sending the child to the health room promptly. The use of the absentee book for the nurse's home calls was also described.

When the child reports to the health room, he is seen by the nurse, or if she is not there, by the assistant principal. If the child is unable to remain in school, he is given an exclusion slip, and if indicated a diagnostician from the department of health is called. For less serious conditions a permit slip to go home—which gives information to the parent—is given to the child.

If it is necessary to send a child home during school hours he is accompanied by a teacher for safety reasons. A system has been worked out for calling the faculty members in rotation for this duty, relieving the teacher during her absence from her room. The plan has certain advantages in giving the teachers a contact with the homes.

In order to reduce the number of children who had to be sent home, a concentrated effort was made last year to educate children and parents that the children should stay at home when they were ill. This educational program was carried on through advice in the health room and slogans on the bulletin boards.

A record was also kept of the children taken home, stating the name, section, date, reason, and any pertinent remarks. In this way it was possible to check on children having repeated illness and to study the causes of absence. At various times during the semester, articles were published in the school newspaper informing the children of health conditions in the community and urging them to remain home when ill. On one bulletin board appeared these slogans:

Stay home:
If you are ill.
If you have a very bad cold.
If you have a rash of any kind.
If you have a sore throat.

Through the coöperation of parents, doctors, nurses, teachers, and children, we were able to reduce the number of sick children taken home from 400 pupils in the year 1936-1937 to 145 in the year 1937-1938.

WHAT DO TEACHERS THINK?

The question may be asked: What do the teachers think of the plan for teacher-inspection of children? Recently the Poe School sent a questionnaire to its teachers asking whether they were satisfied with the present techniques of screening for defects and for daily health problems. Of 28 teachers, 23 were satisfied with the general technique of screening; 5 were not. Comments, both favorable and unfavorable, were received. "I have found it helpful in knowing the children in different ways," said one teacher; while another said, "We do not feel well enough prepared to be accurate." All 28 were satisfied with the technique of daily inspection. Helpful suggestions were made regarding the various specific techniques, such as hearing and vision tests and dental

inspection. Administrative adjustments are to be made to carry out the suggestions insofar as it is possible to do so.

While the health problems of a large school are various and numerous, our experience has taught us that there is always a logical solution if the people concerned have a knowledge of the condition. Administrators are convinced that vitally interested teachers who are well informed concerning health are able to assist the public health workers in maintaining the health of the community.

COLD WEATHER LUNCHES

A GOOD home luncheon is better than the doughnuts, frankfurters, sweet rolls, and the like which school children frequently buy at the corner store. Such foods are inconsistent with good health and growth in boys and girls, since they furnish less nourishment than health and happiness require. They are incompatible with a low income, too, for they cost more than a well planned meal prepared at home.

School children usually have only an hour or less for their noon meal; and if this time must allow for walking to and from school, it is evident that their lunch should be something that can be eaten fairly quickly.

It may take so long to chew the raw vegetable salad that is valuable for giving needed exercise to the teeth that it is better to leave this dish until the more leisurely evening meal.

If the soup or cocoa is so hot it burns the tongue, the children may become fidgety waiting for it to cool. A *warm* food on a cold day, however, will help to stimulate a faltering appetite and will give one a cheerful feeling.

The following combinations are suggestions for luncheons which may be easily prepared before the children arrive home. Each combination contains a dish made with milk, so it is not necessary to have milk to drink; but it may be added if desired and if the food budget permits.

LUNCHEON SUGGESTIONS

Cream of split pea soup
Toast or bread
Banana

Corn chowder
Toast or bread
Oatmeal cookies

Mashed potato cakes
Bread and butter
Cocoa
Prune pudding

Creamed eggs and potatoes
Bread and butter
Apple sauce

Corn-meal mush and milk with raisins
Bread and butter if desired
An apple

Many of these, and other luncheon dishes, may be prepared with left-overs from the previous evening's meal, and efficient cooks often plan their dinners to provide left-overs. The practice makes both for convenience of preparation at lunch time and for economy.

—*Nutrition Notes*, A.I.C.P., New York, N. Y.

CHANGING REPORT CARDS

The traditional report card with its A's, B's, and F's, or its 90's, 80's, and 60's is rapidly being supplanted in many school systems by more complete reports to parents concerning the child's progress in school, his interests, dislikes, character traits, habits of learning, attention, and achievements.

—Office of Education, U. S. Department of the Interior, Washington, D. C.

EDITED BY
ELLA E. McNEIL

LILLIAN WALD, NEIGHBOR AND CRUSADER

By R. L. Duffus. 371pp. The Macmillan Company, New York, 1938. $3.50

Now, after having had *The House on Henry Street* and *Windows on Henry Street* through which we have seen our beloved Lillian D. Wald so intimately, we have her biography by R. L. Duffus to fill in the gaps which had been left in her own writings. No nurse's library will be complete without this book. The illustrations alone stir one's imagination, so suggestive are they of different phases of the life of this magnificently vital woman. Nowhere before have we had a picture of her childhood and girlhood, and it is charming. How much we have needed this to get a better understanding of the environment in which her genius grew and developed. As an example of this phase of her life, how absorbing it is to study the faces of the "family," opposite page 60. How it brings up life in the early years of the century, and how the personalities of those women surrounding Lillian Wald stand out—just as they were rounded out by Lillian Wald's leadership. When we look at the picture opposite page 146, "Woman-of-action," those of us who worked close to Miss Wald in the days of the war are able almost to live them over again.

So much has been said and written of her during these last few years that it is hard to write anything new. This book gives continuity to much that has gone before. We know her a little better, love her a little more because of it. She has clarified life for so many of us. Her thinking is so clear; her courage to face the overpowering issues of life in the world of 1939 is so great; the depth of her understanding and sympathy so sure. We long to find some expression for the deep gratitude we feel for the help her way of thinking has been to us personally. Mr. Duffus writes that she could dissolve almost anyone's intolerance when she repeated the following Henry Street story: "I'll tell you what, the day will come, I am sure, whin the Protestants and Catholics will forgit their bigotries and come together to wipe the Jews off the face of the earth."

There never has been an evil too complex, too cruel, or too involved with "power and glory" for Miss Wald to feel there was no way to wipe it out. This book has gathered together so many stories of evils overcome, progressive objectives achieved; it has brought to our memory again so many phases of her wonderfully vivid life, that courage flows into our own veins, and we find that we have more understanding of the reasons why wrongs exist, and of the way some wrongs have been righted.

No foes shall stay her might,
Though she with lions fight,
She shall maintain her right
To be a pilgrim.

MARY BEARD, R.N.
Director, Nursing Service,
American National Red Cross

BEHIND THE SYPHILIS CAMPAIGN

By Philip S. Broughton. 31pp. Public Affairs Committee, 8 West 40 Street, New York, 1938. 10c.

From the Public Affairs Committee comes this pamphlet on syphilis which is admirable. The booklets put out by this organization are, according to their

own statement, "written for people who are too busy to study long volumes. They summarize thousands of pages of research, and separate facts from propaganda." Mr. Broughton in *Behind the Syphilis Campaign* has realized these aims. Out of the mass of material on syphilis he has, with unerring judgment, selected the salient points. Writing in an entertaining, conversational style he proposes questions which are being asked by the general public and answers them with clearness and sanity.

Although this pamphlet is written primarily for the general public, nurses may also find it useful—especially those who are constantly being called upon to interpret this current health movement to community groups.

GLADYS L. CRAIN, R.N.
Buffalo, New York

CAUSE AND PREVENTION OF DISEASE

By William Harvey Perkins, M.D. 713 pp. Lea and Febiger, Philadelphia, 1938. $7.50.

This work has resulted from a need for a comprehensive presentation of the known causes, origin, and effects of disease. Dr. Perkins holds the point of view that every disease must result from knowable causes operating under natural laws that can be determined. In the preparation of an inclusive review of the causes of disease and the methods of preventing it, the factors involved have been classified into six great categories. The discussion of each category includes the methods of defense that may be employed in combating disease. Extensive lists of parasites, chemicals, and other agents affecting man and animals are included.

Category I deals with inherited factors in connection with diseases and the defenses against disease. Category II is concerned with the nutritive elements—water, proteins, carbohydrates, fats, salts and minerals, and vitamins. Category III includes exogenous chemical agents which cause disease when inhaled, ingested, or acquired through the skin or other parenteral tissues.

Category IV deals with physical forces and energies and the defenses against them. It includes a discussion of body mechanics, physical forces, barometric pressure, heat and cold, humidity, air currents, climate, radiant energy, and electricity. Category V is concerned with the effects of invading organisms, while Category VI deals with psychologic and social factors.

The philosophy of all-inclusiveness is dominant and the result is in a sense encyclopedic. The work grew out of study and experience in organizing a course in preventive medicine. It will be particularly useful as a reference and should be of special value to those confronted with similar problems.

ADOLPH WEINZIRL, M.D.
Portland, Oregon

ALCOHOL IN MODERATION AND EXCESS

A Study of the Effects of the Use of Alcohol on the Human System

By J. A. Waddell, M.D., and H. B. Haag, M.D. 184 pp. William Byrd Press, Richmond, Virginia, 1938. $1.

It is rare that a book has the distinction of being publicly burned. Even more unusual is it to find a state legislature calling upon medical faculties to prepare text for school books.

This volume, written by two professors of pharmacology at the request of the General Assembly of Virginia of 1936, gives a simple, nonemotional description of the well established facts as to the usual effects upon human conduct and functional performance of alcohol whether used in so-called moderation—that is, short of obvious drunkenness—or in excess.

An indispensable part of the book is its suitably brief descriptions of some of the important facts of human anatomy and physiology without which school teachers could not understand the toxicology of alcohol. The glossary of terms is useful, and the extracts and

references in the field of the medical sciences are well chosen and authoritative. The index is convenient, sufficiently extensive, and accurate.

This book can be used with entire confidence in the scientific validity of its contents, the facts upon which the opinions are based, and the lessons to be drawn from human experience and experimental evidence on the effects of alcoholic beverages.

HAVEN EMERSON, M.D.
New York, New York

DISEASES OF THE SKIN FOR PRACTITIONERS AND STUDENTS

By George Clinton Andrews, M.D. 899 pp. W. B. Saunders, Philadelphia, Second edition revised, 1938. $10.

This work, intended primarily as a text for undergraduate medical students and for general medical men, might well serve certain purposes as a reference book for the various nursing fields.

The common diseases of the skin are treated authoritatively and in detail and should be of interest to all nurses. The section treating dermatitis medicamentosa is excellent. The chapter on dermatitis venenata and industrial dermatoses should attract the attention of industrial, rural, and school nurses. The sections on self-inflicted diseases of the skin, pseudo or quack beauty cures, the care of the infant, and the relationship of diet to disease should be especially valuable. The more than one hundred pages devoted to syphilis are excellently illustrated and present a most progressive viewpoint.

For the nurse, this book is of more value as an aid in understanding the general symptomatology than it is for guidance in giving nursing care. It is rendered less valuable by the omission of a separate chapter on general therapy. Treatment is outlined; dermatological nursing procedures are seldom described in any detail, and often so many different modes of therapy are suggested as to be confusing to anyone but a physician. If the nurse already has a good background in dermatological nursing, this text which is intended for more advanced students will tend to supplement her knowledge, but it will not give her information on basic principles. The acute exanthemata, measles, chickenpox, and scarlet fever, are not treated at all in this text.

NORMAN R. INGRAHAM, JR., M.D.
Philadelphia, Pennsylvania

GAMES FOR QUIET HOURS AND SMALL SPACES

By National Recreation Association, New York, 1938. 59pp. 50c.

A grand little booklet of new and old games for grown-ups and youngsters. What a joy not to have to spend hours and hours trying to remember how those little match tricks were done. They are all in *Games for Quiet Hours and Small Spaces,* and you will find lots of simple little games to keep children busy on trains or in automobiles. A truly welcome booklet to have at home and a particular boon to anyone facing the boredom of a convalescence. A.P.

CHANNELS

The *News Bulletin* of the Social Work Publicity Council, a monthly guide and help to all who are striving to carry on a good publicity program, has been replaced by *Channels,* a printed periodical.

Channels is a longer publication with a most attractive cover and format. It still has the same editorial policy, and the material is always a constant help to board members and public health nurses in carrying out their own local publicity programs.

Membership in the Social Work Publicity Council, which is $3 a year, includes subscription to this bulletin. Single copies may be obtained for 40 cents each from the Council, 130 East 22 Street, New York. E. K. D.

• The National Conference of Social Work will hold its next annual meeting in Buffalo, N. Y., June 18-24.

• The National Society for the Prevention of Blindness has announced the appointment of a Nursing Advisory Committee, headed by Katharine Tucker, professor of public health nursing at the University of Pennsylvania. The committee has been selected to represent the various fields in nursing, including nursing education—graduate and undergraduate—and public health nursing in its many phases. The first project of the committee is to make an analysis of nursing functions which contribute to the conservation of sight.

• Fifty famous recipes are now available for those who have enjoyed Della DeGraw's cooking at Nurses' House in Babylon, New York. Your favorite is probably among them. Because of the many requests, these favorite recipes have been compiled by the Nursing Bureau of the Association for Improving the Condition of the Poor and they are on sale for the benefit of the Building Fund for the wing of single rooms at Nurses' House. These family-size recipes are compiled in loose-leaf form on three-by-five cards and sell for $1 plus 10 cents postage. Order direct from Della DeGraw, Nurses' House, Merrick Road, Babylon, N. Y.

• The November and December 1938 issues of *Child Study* are the anniversary numbers celebrating "not only the fiftieth anniversary of the Child Study Association but also the achievements of this half-century in the fields of child development and parent education." This magazine is published by the Child Study Association, 221 West 57 Street, New York, N. Y., and the subscription is $1 a year.

• The Leslie Dana Gold Medal was presented to Dr. Ellice M. Alger of New York City at the annual meeting of the National Society for the Prevention of Blindness on December 1. This honor is given each year for "outstanding achievements in the prevention of blindness and the conservation of vision."

• The industrial nurses of Oakland, California, have organized as a group in Unit No. 1 of the California State Organization for Public Health Nursing in order to discuss their mutual problems and to unite with other public health nurses in the community. The members organized first as an industrial nursing group with eleven nurses on March 16, 1938. They met monthly until October when they joined with the C.S.O.P.H.N. and gave the program for the October meeting. Ten industrial nurses gave brief descriptions of their work and the products made by their respective companies.

The group holds its own meetings on alternate months in order to discuss the problems peculiar to industry. It has grown steadily in size and enthusiasm and now has 19 members. All but one of these are from establishments employing full-time industrial nurses. One small factory buys the part-time services of a nurse from the Oakland Visiting Nurse Association.

Margaret I. Breck of The Paraffine Companies, Inc., Emeryville, Calif., is chairman of the industrial group.

Study Page for February

Suggestions for Board Members, Executives, Staff Nurses, and Students

The following questions are based on the published material in this number, and offer suggestions for the use of the magazine:

Board Members

What is the significance of play in a child's development? *Play Is the Thing.* Page 68.

Is cancer preventable? Is it hereditary? *The Nurse's Part in the Control of Cancer.* Page 85.

Which is more important in moving a person with a fracture—speed; or comfort and protection of the injured part? *Problem in the First-Aid Treatment of Fractures.* Page 106.

What are some of the problems encountered by a public health nurse working in the mountains of the South? *Selling Health in the Mountains.* Page 89.

Can children with cerebral palsy be successfully treated? *The Nurse's Part in the Treatment of Children with Cerebral Palsy.* Page 101.

Executives and Supervisors

What does the nurse need to know about cerebral palsy in order to participate effectively in the treatment and rehabilitation of patients. See question 5 under Board Members.

Does tuberculosis nursing constitute a hazard to the nurse? *Tuberculosis Among Nurses.* Page 93.

What does a nurse need to know about oxygen therapy in order to carry out this treatment for a pneumonia patient under the physician's orders? *Oxygen Therapy in Pneumonia.* Page 77.

Staff Nurses

What are the underlying principles of safe and effective oxygen therapy and how may it be administered in a home? See question 3 under Executives and Supervisors.

How can the nurse guide the family in providing suitable and inexpensive play materials for children? See question 1 under Board Members.

What is the most important principle in the first-aid treatment of fractures? What types of protection are best for various types of fractures? See question 3 under Board Members.

What are some of the values of having the teacher make a health inspection of children to "screen" those with gross defects? *Training Teachers for Health Inspections* and *Health Inspection as Viewed by a Teacher.* Pages 121 and 124.

What can the public health nurse do for the child with cerebral palsy? See question 5 under Board Members.

Student Nurses

What are the physiological reasons for using oxygen therapy in pneumonia? Can the treatment be carried out effectively outside of a hospital? See question 3 under Executives and Supervisors.

Why is play important for the child? See question 1 under Board Members.

What would you tell a patient who asked you whether cancer is hereditary? See question 2 under Board Members.

How does the rural nurse teach health among the mountain people of the South? See question 4 under Board Members.

What is the most important principle in moving an injured person who may have a possible fracture? What things are important in first-aid treatment of skull fractures? See question 3 under Board Members.